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THE BURIAL COMPLEX OF THE REIGH SITE, WINNEBAGO COUNTY, WIS.—David A. Baerreis, Hiroshi Daifuku and James E. Lunstad 1

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THE BURIAL COMPLEX OF THE REIGH SITE, WINNEBAGO COUNTY, WISCONSIN

David A. Baerreis, Hiroshi Daifuku, and James E. Lundsted

Introduction

During the past fifty years a very considerable portion of Wisconsin's archeological resources have been destroyed by agricultural operations, road construction, city expansion and many other processes attendant upon an expanding population. Since these activities show no signs of abatement, it is a very pleasant task to report the rescue of an important body of information from a key site threatened by destruction. This, the Reigh site, is located in Algoma Township, Winnebago County, on the south shore of Lake Butte des Morts (Sec. 7, T 18 N, R 16 E). It consists of a cemetery and a later village site placed upon a high gravel ridge overlooking the lake. Sites having a comparable position on Lake Winnebago and the chain of lakes (Butte des Morts, Winneconne and Poygan) connected by the Wolf River have received frequent mention in brief reports, but adequate descriptions permitting cultural identification have been rare.

A portion of the farm (formerly the O'Krueg farm but now owned by Mr. Matt C. Reigh) on which the site is located is now being operated as a source of sand and gravel. During July, fill was being removed by Mr. Bernard Miller of the B. F. Miller Excavating Company and in the course of this work he encountered several burials. This find was reported by Mr. Miller to the Oshkosh Public Museum. James E. Lundsted, Curator of Anthropology of that institution, investigated the site and determined that its size and the need for speed in salvage work would require additional trained

help. Mr. Lundsted therefore called John W. Jenkins, Chief Curator of the State Historical Museum who sent Hiroshi Daifuku of their staff to aid in the work. Preliminary explorations confirmed its importance and the scope of the site made further aid imperative. The crew working there was finally augmented by David A. Baerreis of the University of Wisconsin, a group of students from that institution (Alexander Alland, Jr., John Dallman, Richard Keslin, Robert Maher, and Robert Nero), and Warren Wittry of the State Historical Museum. The coordination of this work was achieved through the Wisconsin Archeological Survey which has, as one of its objectives, such emergency work in archeology. The expenses of the field work were supported by grants from the Graduate School of the University of Wisconsin, the State Historical Society of Wisconsin, and the Wisconsin Archeological Survey. Several of these institutions, including the Oshkosh Public Museum, contributed the services of their staff members.

Special mention must be made of the assistance given to us locally. Mr. B. F. Miller not only reported the presence of the site but scheduled further sand and gravel excavations so that they would not interfere with archeological salvage. We are deeply appreciative of the permission to work in the area given by Mr. Matt Reigh, and also for the pleasant hospitality of Mr. Reigh and his son-in-law, Mr. George Patzlaff. Mr. Patzlaff was of considerable assistance in providing fencing for the site since most of the work was accomplished on week ends to avoid interference with summer school at the University. He also aided in removing fill and overburden from the burial area with his tractor.

The map of the burial area included in this report was prepared by John Dallman from our field version. We are indebted to Dr. Austin L. Rand, Curator of Birds of the Chicago Natural History Museum for the identifcation of bird bones found at the site.

In this report our objective is to describe the burial complex and associated artifacts. In the plow zone overlying the burials a few sherds were recovered though none appeared in the actual fill of the graves themselves. Marginal

to the cemetery area a series of large basin-shaped pits contained additional ceramic material. The ceramic material appeared to be later than the burials since no sherds were found within the grave fill. Since they seem to represent a distinct and more recent occupation of the site, these materials will be presented separately in a paper being prepared by Warren L. Wittry. A desire to avoid excessive length in the paper as well as to expedite publication of the burial complex precludes the inclusion of the pottery report at this time.

Burial Complex

Excavations at the Reigh Site disclosed that the burials were primarily concentrated in an area 32 by 36 feet in maximum dimensions with a few additional ones placed 40 feet northwest of the main sector (see Map 1). A total of 43 individuals were removed, a figure which does not include the burials disturbed prior to our work. In part, the numbering of the burials was determined by convenience in the field situation for not all individuals included under a single number were necessarily interred at the same time. Since this factor is crucial in determining the sequence of events at the cemetery, each of the burial groups will be described with stress placed upon the information that will aid us in establishing whether we are dealing with a single burial complex or the burials of several cultural groups. Many of the burials at the northern margin of the area have suffered some disturbance, either due to the action of a power shovel used to remove sand and gravel for commercial purposes or to subsequent probing or excavation prior to our work. Burials at shallow depths also appear to have been disturbed by deep plowing.

For each burial the approximate depth below the surface is given. This measurement is an approximation since the topsoil had been previously stripped from most of the region by the power shovel. The technique used was to carry a horizontal level from the closest undisturbed point to the region of the burial and then to take a vertical measurement at that point. Since the undisturbed regions were at the south and southwestern margin while the land sloped slightly to the north, this procedure might tend to slightly exaggerate the

depth rather than give a picture of unduly shallow burials.

Below the topsoil in this region, which was entirely in the plow zone, was a zone of reddish stained sand, generally consolidated markedly. Below this was an unconsolidated sand of light color. Burials occurred in both sand zones, usually with no clear pit outlines.

The burials are described roughly in their order of appearance from east to west in the area excavated.

Burial 25. Subsequent to the discovery of the original burials, commercial gravel and sand removal was confined to the area west of the presumed burial zone. The lower limbs of one burial, however, were struck in this area and additional bones were discovered in the bank face. Although given a single number, actually two distinct burials were represented.

As the excavation proceeded into the undisturbed area, it became evident that we had the remains of an extended burial aligned in a northeast-southwesterly direction with the head originally at the southwest end. The bones of the feet and the two tibiae and fibulae had been removed along with the sand and gravel. The two femora were still in place, however, articulating with a horizontally placed pelvis indicating that the individual had rested upon his back. The right arm was also found in an extended position along the side of the body. The remainder of this burial, at first glance, appeared difficult to interpret. A skull, badly cracked and lacking the mandible, was resting in an upright position over the abdominal region. Below the skull were a series of vertebrae and a few ribs in normal anatomical position but the bones of the left arm and upper portion of the body were missing.

The reason for this seemingly peculiar combination of primary and secondary burial practices became clear as the excavation proceeded in a southwesterly direction. The lower legs of a second individual occupied the position where the left arm and upper portion of the body of the first burial should have been. We may designate the burial of the first individual as 25A and that of the second as 25B to clarify our description. Further excavation disclosed that Burial

25B consisted of a fully extended burial on the back with the arms extended at the side. The head was at the southwestern end of the grave and rested upon the right side. It seemed clear that the reason for the disturbed condition of the grave of Burial 25A was that this older burial pit had been dug into at the time Burial 25B was inserted into the cemetery. When the older grave was encountered, the skull of Burial 25A was pushed to one side in the corner of the new grave pit. Further confirmation of this is seen in the fact that the mandible which belongs with the skull of Burial 25A was found in the fill of the grave of Burial 25B resting five inches above the bones of this individual near the left humerous. Both burials had a similar orientation and the graves were dug to the same approximate depth, 1' 10'' below the surace.

The only grave goods found with this burial was a chipped stone knife which rested with the base immediately at the tip of the right hand of Burial 25B. If the knife had been mounted in a wooden handle, which would have decayed, the handle of the knife might have been grasped in the hand at the time the person was buried. The knife, manufactured by percussion and pressure flaking techniques from a mottled grey and white chert, is illustrated in Figure 1, A, and the dimensions are given in Table 1.

Burial 6. Except where a burial has penetrated the light colored sand which underlies the topmost strata at the Reigh Site, it is difficult to determine with accuracy the outlines of a burial pit. Thus some question does exist as to whether or not all of the individuals included as Burial 6 represent a single interment.

The presence of this burial was also indicated by the exposure of bones in the face of the pit excavated by the power shovel. The profile formed by this digging indicated the presence of bones in the compact reddish sand only 4-5 inches below the surface as well as a second layer of bones 10 inches below this point. Obviously portions of the burial had been removed but the excavation disclosed that this was probably only the edge of the burial.

Cleaning the top layer of bones was a difficult operation because of their fragmentary condition and poor state of

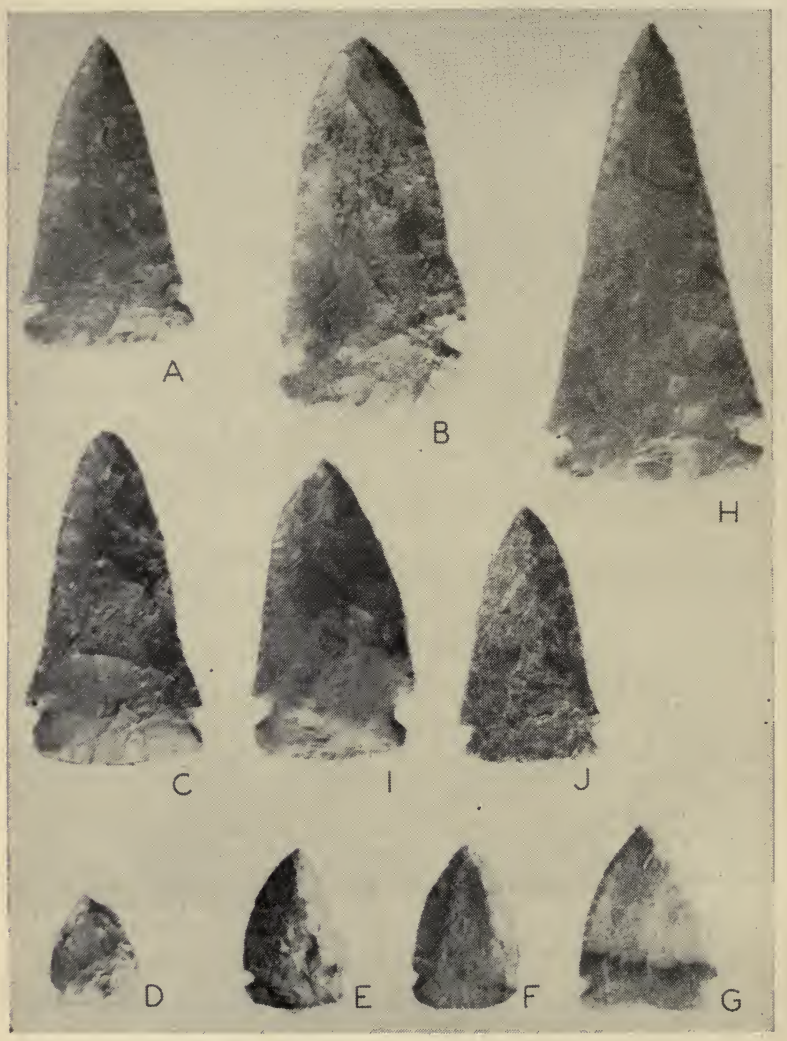


Figure 1.

Chipped Stone Knives and Projectile Points from the Burial Area. A.—Knife, Burial 25; B.—Knife, Burial 26; C.—Knife, Burial 4; D.—Projectile Point, Burial 4; E-G—Projectile Points, Burial 5; H.—Knife, Burial 11; I.—Knife, Burial 23; J.—Projectile Point, R9.

preservation. This is largely to be accounted for by their very shallow depth and the probability that the bones had been disturbed by plowing. The presence of three skulls attested to the minimal number of individuals represented in the top layer of the inhumation. To the south of skull A and east of skulls B and C was the distal end of a radius. A small mass of long bone fragments lay to the west of skulls B and C. Skull A was that of an adult which rested upon the left side with the face to the north. Skulls B and C were somewhat thinner, perhaps representing either females or young adults and both appeared to have been face upward though this section of the skull was perhaps romoved by plowing. The fragmentary condition of the remains led us to the conclusion that these were secondary burials but we cannot estimate the amount of dislocation which might have been caused by farming activities. Scattered and broken bones were found in the sand below this top layer until the second level was reached. Here it became clear that we were dealing with a complex, multiple interment. The topmost layer of bones occupied a position three feet wider (in an east-west direction) than the second layer, while the second layer extended three feet farther in a southerly direction than did the topmost layer. However, since the central point of the top layer of bones was directly over the central axis of the second layer, both layers may have been placed in the same burial pit. No pit outlines were detected that would confirm this point.

As the burials of the second layer were exposed, they appeared to be a confusing mass of the remains of at least five individuals since that number of skulls were present. The positions of the bodies became clear after the upper bones were removed and we shall give our description in the reverse of the excavation procedure to reconstruct the sequence of events that took place in the burial ritual.

At the very bottom of the mass of bones was the extended body of an adult male, an individual whose status may have been indicated by the presence around the skull of a series of copper strips which had been originally attached to a headdress or a strip of buckskin or fabric. The strips ex-

tended around the sides and front of the skull, though not around the back (Figure 2, B). Hammered from sheets of thin (2 mm.) copper, most are 48 mm. in length and taper from a broad, rounded top (7-11 mm. in width) to a narrow (4 mm.) lower end. This lower end is folded underneath and may at this point have been attached to an encircling band. The head of this individual was at the southern margin of a roughly rectangular grave area having its long axis in north-south direction. Though the head was slightly inclined toward the right side (east), the face tended to look toward the foot of the grave (north). The legs were fully extended and parallel to each other. Between the lower limbs had been placed two sets of the bills of a crane (**Grus canadensis**), now badly decomposed. Both arms were extended at the side though the right arm was flexed outward slightly. In the crook of the right arm was placed an infant which can be recognized in Figure 2, A, only by the top of the cranium. Because of the thinness of the skull vault, it was badly crushed. The absence of the mandible and some of the other bones of the infant indicates the possibility that it may not have been a primary burial but a secondary burial in which some of the bones had been lost. Immediately below this infant and inside the right arm of the adult at the elbow region was found a conical antler point (Fig. 2, C). The point is 85 mm. in length, 17 mm. in diameter and has a pointed projecting spur at the basal sector. A second and smaller (58 mm. in length) antler point in fragmentary condition was found among the ribs of the adult.

To the left and parallel to the legs of the adult had been placed the extended burial of a child. The head of the child was also to the south with the face upward. The left arm was extended along the side while the right arm had been flexed diagonally so that the forearm rested across the chest. Presumably the legs were fully extended but only the two femora were present since the lower legs had been removed by the power shovel.

The last interment of this level consisted of two adults placed at the left and right shoulders respectively of the extended adult. At the left shoulder was placed an individual

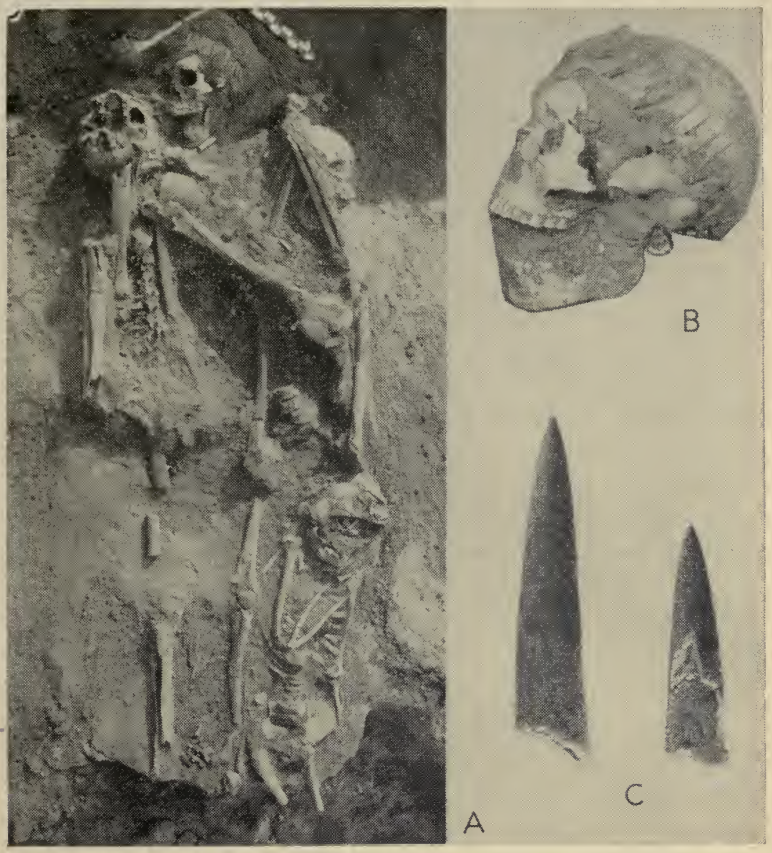


Figure 2.

A. (left) Burial 6. B. Detail of skull with copper ornaments. C. Conical bone points found with burial.

whose skull lay on the left side with the head to the south and the face to the west. The body rested on the back with the arms tightly folded back upon the body. Both legs were in an extended position but folded tightly back upon the body so that the ankles which were crossed rested upon the head. The adult body which rested upon the right shoulder appears to have been a secondary burial, judging from the disarray of the bones. The skull rested in an inverted position with the face to the south. To the north of the skull were the two tibiae and fibulae with the pelvis at the north end. The two

femora were sprawled across the chest of the primary adult with their anatomical relationships reversed. A single ulna lay above the skull of the primary adult.

Thus there were in all five individuals in the lower level, consisting of both primary and secondary burials, plus three individuals in the upper level who may have been interred after the burial pit had been partially filled. The relative position of the bodies suggested that the burial ritual revolved around the extended adult placed at the very bottom of the of the grave. At the time of his burial the other individuals were placed in the grave in a manner reminiscent of retainer sacrifice in late Indian sites of the Southeast. It is difficult to be certain that this is actually the case, however, and alternative explanations as to the nature of the social group or situation would be equally plausible.

Burial 17. This secondary burial was located immediately to the north and west of Burial 6. The faint outlines of a pit appeared adjacent to the bones, outlining a roughly oval area approximately 2 x 3 feet. The topmost level of the bones was 22'' below the surface level, and the vertical thickness of the bone layer was 10''. Within the fill of the pit were found the fragmentary remains of two skulls of young children. Mixed in the pit fill in no apparent order were portions of the facial region of one of the skulls, fragments of a mandible, a pelvis, and a small femur. Immediately adjacent to one of the skulls was a crumbly block of reddish sandstone. A difficult item to explain when the burial was first encountered was the occurrence of the major portion of an adult femur in contact with the skull of the second child. From its size, it was obvious that it could not have been a femur belonging to either of the children represented by the two skulls. Though only a portion of the bones of the two children were recovered, it is possible that some were removed by the disturbance we have previously mentioned.

Burial 20. After Burial 17 had been removed, the extended burial of an adult with the head to the southwest and with the lower portion of the burial extending under the area occupied by Burial 17 was discovered 33'' below the surface. This individual had been buried on the back with the head on

the right side. The right arm was tightly flexed with the hand doubled back to the shoulder area. The left arm had the forearm flexed at a right angle across the abdomen. So far as the legs were concerned, the left femur was in an extended position, articulated with the pelvis but only the head of the right femur was present. While the lower limbs were absent, presumably due to the action of the shovel in removing sand from this region, there seemed to be no rason why the right femur should be missing. The explanation is that when the pit for Burial 17 was dug, a portion of the earlier Burial 20 was encountered. The disturbed adult femur in the fill of this grave must have belonged to this individual. Thus, in this instance, the secondary burial is clearly later in time than the extended burial.

Burial 10. North and west of the preceding burial was a large area containing some of the most difficult burials to interpret. While these remains are grouped under a single number, it could not be determined whether this represented a single mass burial. Some indications point to the fact that disturbance of the area took place after a portion of the primary burials were placed in the region. Additional disturbance may have been due to plowing since the bones were approximately six inches below the surface. This may account for the poor state of preservation and broken condition of the bones.

The area designated Burial 10 is a roughly rectanguloid region approximately 10 by 5 feet, the long axis of the area being in a northeast-southwesterly direction. As with other burials of this region this may not be the maximum extent, since the northern edge encroached upon the disturbed area. We may describe the remains beginnng with the northwestern corner since burial of an adult, placed on the back with the arms extended along the side. The skull of this individual (A) was on the right side, the head being to the southwest. A limestone block was adjacent to the occipital region of the skull. On the right shoulder of this individual rested an additional adult skull. This may not have been the position in which the skull had been placed at the time of initial burial. Additional bones, probably belonging to the same person were

scattered in the area. The mandible rested upon the chest region of individual A, for example. It seems probable, however, that at least one extended burial had been disturbed at the time the extended burial of individual A took place. Immediately to the southwest, and partially covered by the right side of individual A were two femora, articulated with a pelvis and a right ulna in the proper position for an extended burial with the head to the southwest similar to individual A. The burial of this individual, therefore, is regarded as antedating A and it is probable that most of the bones belonging to it were scattered at the time of the later burial.

Southeast of the skull of A, and separated from this burial by at least one foot, were two tibiae lying parallel to each other, each having the bones of the feet in place in normal anatomical order. The remainder of this burial, again evidently an extended burial with the head to the southwest, was not in position. The body had been chopped off at the knees by disturbance in the area. Since the burial lay beyond the presumed limits of any grave pit which might have been dug for individual A, we must look for some other cause for the disturbance. A possible explanation is to be seen in the fact that 12'' southwest of the proximal ends of the tibiae is an area of dark earth 10 x 18'' in dimensions, containing charcoal, ash and numerous small fragments of burned human bone. The remains of a partial cremation had been deposited in the region. The burial of the cremation, which occupied a portion of the area where the remainder of the extended burial had rested, would appear to have been the cause of the disturbance. Resting upon the cremated area was the solid tip of a deer antler which had been cut off squarely at the base. This artifact had a gently rounded tip and was 65 mm. in length and had a maximum diameter of 17 mm. at the base. Possibly it had been used as a flaking tool but it may also have been an unfinished conical antler point.

At the southwestern edge of the burial area was a confused mass of human bones, the majority being badly scattered and not in articulating position. Included in these bones, however, were the remains of a child's skeleton extended on the back and again oriented with the head to the southwest. The

disarticulated adult bones were scattered in part above the burial of the child.

With one further clue, we may attmpt to reconstruct the chronology of events in the area designated Burial 10. The last bit of evidence is that when the burial of individual A was removed, additional burned bones were found below the vertebral column. We may therefore suggest that the area of Burial 10 was first occupied by three extended burials, two being adults and the third a child. Subsequently these were partially disturbed by the insertion of the partially cremated remains in the area. The last disturbance, and the final burial to be inserted, was the extended adult (A). This person was not only buried over part of the cremated remains but may have further disturbed the extended burial immediately adjacent to it on the southeast. If the cremated remains represent only a single individual, Burial 10 consists of the sequent burial of at least five individuals.

Burial 18. When Burial 10 was removed, an extended burial was discovered below its northwestern margin, located approximately 20'' below the surfoce. The head was to the northeast and the skull lay on its right side. The individual rested on the back with the arms extended along the sides and the legs were fully extended though converging slightly toward the feet. The bones of the left foot crossed over those of the right foot. As the bones of the burial were being removed, a conical copper point was found beneath the head of the right femur. This would place it immediately adjacent to the right hand.

The copper point is an example of a variety which has been designated Type I-L in a typological study of Old Copper implements (Wittry, 1951: 11). It is a form which, in many features, shows marked parallels with the conical antler point. These points were formed by hammering and rolling a triangular sheet of copper. The tapering tip was beaten to form a strong, solid area but the butt end was left loosely rolled so that a shaft could be inserted in the cavity. A portion of the basal section of this specimen is missing so that the present length of 45 mm. is unduly short. The maximum width at the base is 6 mm. and the thickness 4 mm. The point is illustrated in Figure 3, A.

Burial 24. This burial number was assigned to a small group of burned bones representing a partial cremation. The bones occupied an area of about eight inches in diameter and was placed fifteen inches below the surface. Although the surrounding soil was hard and appeared baked, the concentration of the bones suggests a redeposition of the remains rather than firing **in situ.** The bone deposit is within the limits of the area assigned to Burial 10 and quite close to the cremated remains of this burial. Despite a somewhat greater depth, it is probable that the remains are a part of the cremation of Burial 10.

Burial 22. In the same area, immediately northwest of Burial 24, were the remains of a distorted and poorly preserved infant skull which was accompanied by a few ribs. Although its depth was recorded as 15'' below the surface, its location is still in the red sandy-clay zone in which Burial 10 was placed. The burial, rather than consisting of a partial, secondary burial, may be a further indication of the disturbance of earlier burials brought about by the insertion of cremated remains in the area.

Burial 26. With the removal of the shallow burials in this area (Burials 10, 24, and 22) and the underlying Burial 18, a still deeper burial was discovered between 21 and 37.5 inches below the surface. Since the burial partially underlies the entire group and shows no indication of being the disturbing factor in the area, it bust antedate the other burials in time.

Burial 26 consisted of two fully extended individuals, lying beside each other with the heads oriented to the southwest. The bodies had been placed in a pit 90'' in length and between 31 and 34'' in width. The individual on the right (A, on the northwest side) was an adult male who rested on the back with the skull oriented face upward. The arms were extended along the side with the hands lying over the lower edge of the pelvic area. The legs were also fully extended but with the left foot bent inward and crossed over the right foot. No grave goods had been placed with the adult male. Individual B, placed to the left of the male, was an adult female. The head was turned on the left side so that it faced the elbow region of B, the whole burial being placed farther

to the southeast. The arms were extended along the side, in this instance with the left hand below the rim of the pelvis. Both legs were fully extended but with the right foot bent inward and crossed over the left foot.

In the right hand of this individual was a chipped stone knife (Figure 1, B), 90 mm. in length, oriented with the tip pointed toward the head rather than toward the feet as might be expected. The knife in manufactured from a distinctive variety of banded chert in which small spherical grey and grey-black grains have been cemented in a white matrix. It is a thick, sturdy point manufactured largely by percussion flaking but with pressure flaking used to produce fine but irregular serrations along the edge. The blade has a slightly recurved outline and the stem with a rounded base was formed by diagonal notches. The thickness (13 mm.) and form would not appear to make this implement an effective penetrating weapon but it would function very efficiently as a cutting implement, particularly in view of the serrated edge. it could be effectively used, then, as a butchering tool. Adjacent to the left humerus of this same individual were two hematite pebbles. One is a rectanguloid shape (58 x 31 x 30 mm.) whle the other is rougly conical (31 x 28 x 25 mm.) The rectanguloid form bears a series of concave faces that have been ground or worn in the object while the conical form also bears several grinding facets. The stones were probably used as a source of the deep orange-red pigment this material will produce when ground. A third type of artifact placed with the same individual was a conical copper point, again of Type I-L (Figure 3, B), found four inches to the south of the occipito-parietal region of the skull. It lay in the discolored sand zone of the burial pit at a depth equal to the lowest part of the woman's skull. The point is 71 mm. in width, and 11 mm. in maximum thickness. The base of the copper implement is oriented diagonally to the long axis.

Immediately to the southwest of Burial 26 was a small pit, circular in outline (diameter 2') which penetrated through to the sand zone to a total depth of several feet. The pit fill consisted of a black earth and contained abundant charcoal. The precise functional nature of the pit and its time of origin

Figure 3.

Copper Points and Sandal Sole Gorget. A.—Burial 18; B.—Burial 26; C.—Burial 23; D.—Burial 13.

was not determined. North of the pit were two tibiae whose relationship to any of the burials was also in doubt.

Burial 19. Proceeding further to the northwest from the burials described, was Burial 19, located about 2' from the northern margin of Burials 10 and 18 and along the edge of the disturbed area at a depth of about 24''. Because of some disturbance which appeared to have resulted in the removal of the skull as well as other bones, there is some question as to the interpretation of the nature of the burial. Superficially the bones had the appearance of a tight bundle burial. However, the bones present appeared to have been in normal anatomical relation to each other and it seems probable that we are dealing with a fully flexed primary burial. If this is the case the legs and arms were tightly folded upon the body. If, on the other hand, this is a bundle burial it is clear that sufficient tissues were present to retain the majority of the bones in anatomical relationship. No cultural materials were recovered in association with the burial.

Burial 4. This burial symbol designates an area of considerable size (91 x 36 inches), with possibly part being removed due to disturbance. In part, at least, it consists of a partial cremation. The amount of charcoal in the region may indicate a sector in which the cremation took place but the soil is not baked to the extent that would warrant making this assertion with confidence. Several unburned long bones, badly scattered, are also present in the region and appear to represent disarrayed bundle or primary burials. A marked concentration of bones, possibly a bundle, was present on the northwest margin of the area. At the eastern margin of this area, 8'' from the designated burial area and 10.5'' below the surface, a chipped stone knife similar in form to those found associated with burials was discovered (Figure 1, C). The knife is quite similar in firm and manufacture to that found with Burial 26 and appears to have been made of the same variety of chert though it is somewhat darker in color.

At the northwestern margin of Burial area 4, approximately 2' in depth, were the remains of another burial which had been largely disturbed by gravel removal. This separate burial was designated Burial 8. Identifications as to type was impossible due to disturbance. Associated with the bones was a fragmentary projectile point manufactured by percussion flaking from a grey chert. The stem was missing making it impossible to classify. An unmodified flake of white chert was also found among the bones.

Burial 21. Directly to the southwest of the burial groups discussed above was a burial, 20'' below the surface, resting on the back with the arms and legs fully extended. The skull of the burial, oriented to the southwest originally, was missing but evidently as the result of the earlier removal of commercial sand and gravel work. A small projectile point manufactured by percussion and pressure techniques from a mottled grey chert was found below the distal end of the left femur. While the point is basically triangular in outline, shallow notches at the corners bring about an approximation of the form of the knives previously described.

Burial 15. Two feet northwest of Burial 21 was discovered a pit, 17 x 18'', containing fine charcoal forming a dark fill

which included both cremated bones and unburned bones. The pit would appear to have been used as an area of secondary redeposit of partially cremated remains. It was impossible to determine whether the pit fill contains simply the redeposited cremation or in addition the bones of burials disturbed in the excavation of the pit.

Burial 9. A gap of approximately two feet separates the burials previously described from another small group of burials. The easternmost, designated Burial 9, was an extended burial at a maximum depth of 18'' below the surface. The most interesting feature of the burial is that it is resting in a prone (face downward) position. The skull is actually turned slightly to the right side perhaps in part due to subsequent settling of the bones since it is not fully on the right side. The left arm is extended on the side while the right arm though extended has the hand placed under the right side of the pelvis. The legs are also extended but converge slightly at the knees. The feet are not crossed as in several other extended burials reported from this site. The orientation of the head is south by southwest.

Burial 23. At a slightly greater depth, approximately 24'' and with a burial pit that appeared to extend under Burial 9, was another extended burial oriented with the head to the southwest. The head rested on the right side. The left arm was extended along the side of the body and the right arm was also at the side but with the forearm slightly flexed so that the hand rests over the pelvis. The legs were fully extended but the exact position of the feet is unknown since they projected out into the disturbed area.

The burial was richly provided with grave goods. Two worked sections of the humerus of a swan (**Cygnus** sp.?) had been placed in front of the face. One was directly in contact with the face and the other rested diagonally over the first. Two hematite pebbles were resting between these two bird bones while a third was adjacent to the proximal end of the right rumerus. A chipped stone knife of banded grey chert, 73 mm. in length, lay beside the right arm with the tip of the knife pointing toward the feet (Figure 1, I). It was similar in shape and manufacturing technique to the others re-

ported from this site. Laying upon the right arm was an elk antler axe placed with the head of the axe above the middle of the right humerus. A copper point was grasped in the left hand.

Several of these artifacts are unique in Wisconsin archeology and require further descriptive treatment. The swan bones consist of the shaft and distal portion of the humerus, cut off squarely near the proximal end. The two specimens are respectively 196 and 167 mm. in length. Each bears a series of cut notches. On the shorter specimen (Figure 4, A) these are present only on the two sides of the bone. On the longer specimen (Figure 4, B) they are present on four faces. Both specimens bear a high surface polish except where the surface is eroded. While the specimens were identified as swan, it was not possible to determine whether they were trumpeter or whistling swan. The trumpeter swan is now rare or extinct in the region but was formerly resident in the area. The conical copper point (Figure 3, C) is generally similar to those mentioned though the base, in badly eroded condition, appeared to have had a pointed extension. The presence of this basal barb would place it in Type I-N of the Wittry classification rather than Type I-L. The present dimensions give a length of 69 mm. although a small portion of the point is missing; a maximum width of 12 mm.; and a thickness of 7 mm. The axe of elk antler is perhaps among the most interesting of specimens (Figure 4, C). A major tine forms the blade of the axe, 20.5 cm. in length and 52 mm. in width. A smaller, lateral tine forms the handle with the axe having a maximum length of 37.5 cm. The "cutting edge" in this specimen is cut off rather squarely and the absence of the spongy tissue suggests it would form a convenient socket for a stone blade. No trace of such an inset blade was present, however, and it is possible that the lack of spongy tissue is due to decay rather than to intentional clearance of this area. A perforation, 11 mm. in diameter, is placed 10 mm. from the end of the handle. Traces of an additional perforation at the handle base suggests that this end may once have been broken and reshaped. A series of deep notches are placed at the back of the axe below the level of the blade. The hem-

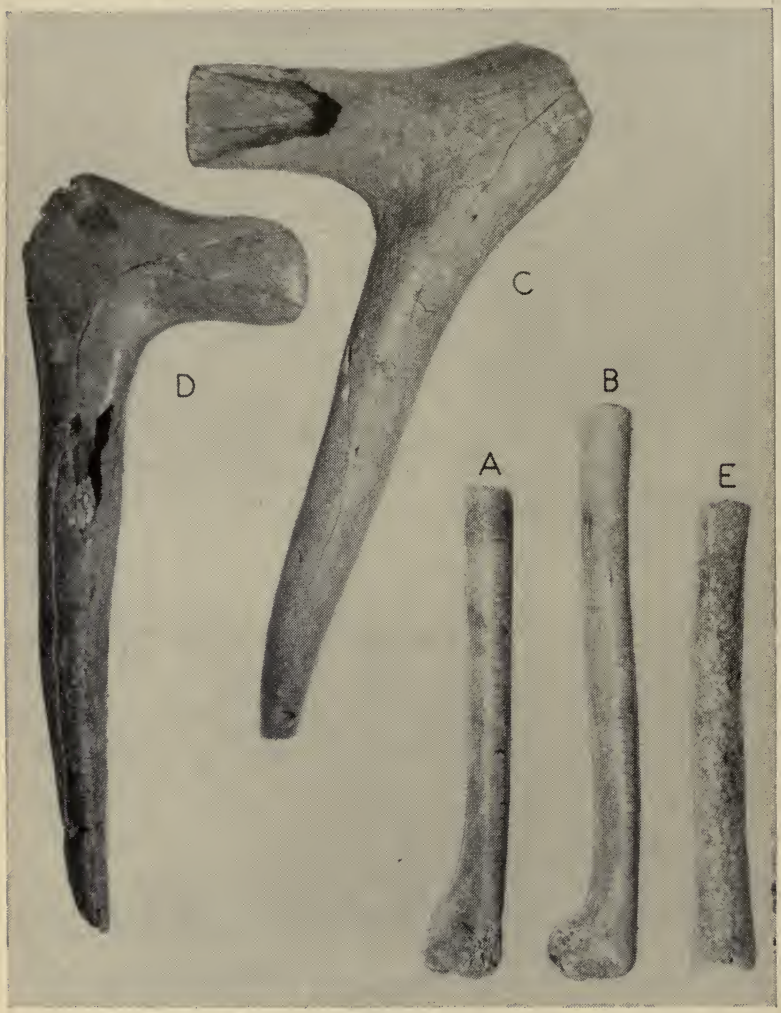


Figure .4

Bone Artifacts from Burial Area. A-B.—Notched swan bones from Burial 23; C.—Elk Antler Axe from Burial 23; D.—Elk Antler Axe from Burial 5; E—Notched swan bone from Burial 11.

atite pebbles were probably used as a pigment source and could have been obtained from the glacial gravels in this area.

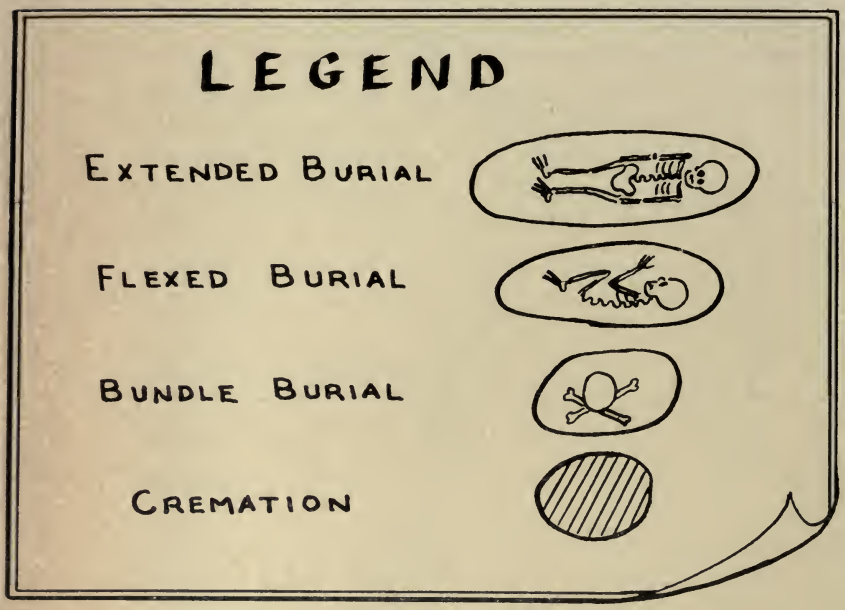
Burial 16. Near the left leg of Burial 23, but evidently representing a separate burial, were found a skull and frag-

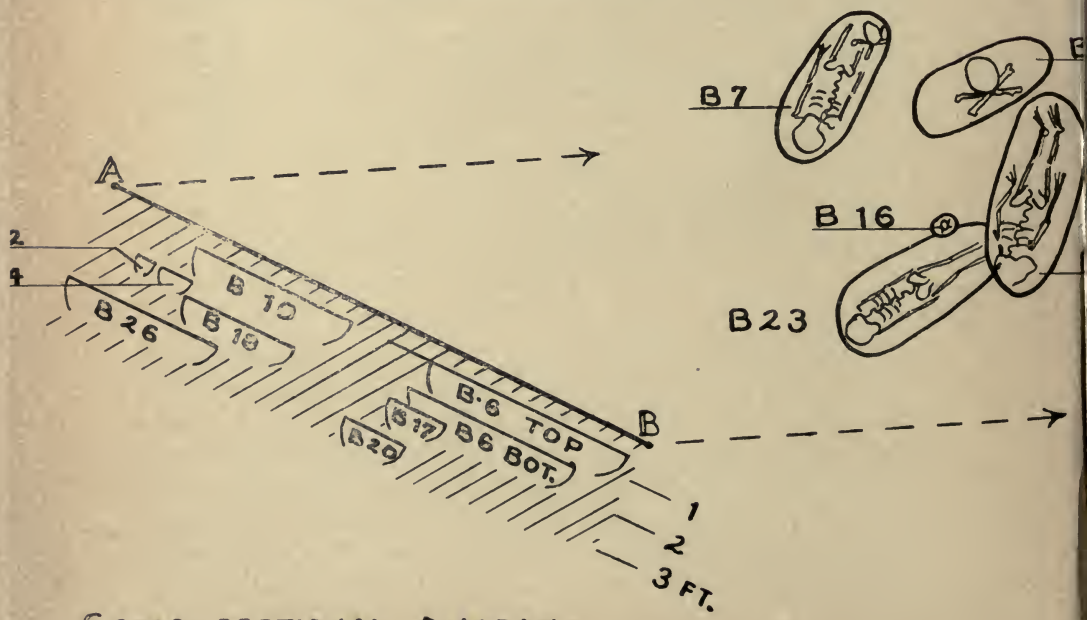
mentary humerus. The skull rested upon its right side, facing the northeast. In view of the fragmentary nature of the remains, it would appear to be a secondary burial though the skull is in about the proper location to be a part of the same individual represented by the lower limbs found at the south end of Burial 12. However, none of the intervening bones were found. The remains were approximately 34'' below the surface.

Burial 12. Two groups of bones are placed under this burial number because of their close proximity, but it seems probable that they represent separate burials made at differnt times. The first group, located at the northwest sector of the area, consisted of two pair of tibae and fibulae (right and left) and associated patellae and foot bones. All of the bones were in a position which indicated they were articulated at the time of burial. A fragment of mandible was near the right patella. The leg bones lay on the right side and their length ran roughly northeast to southwest.

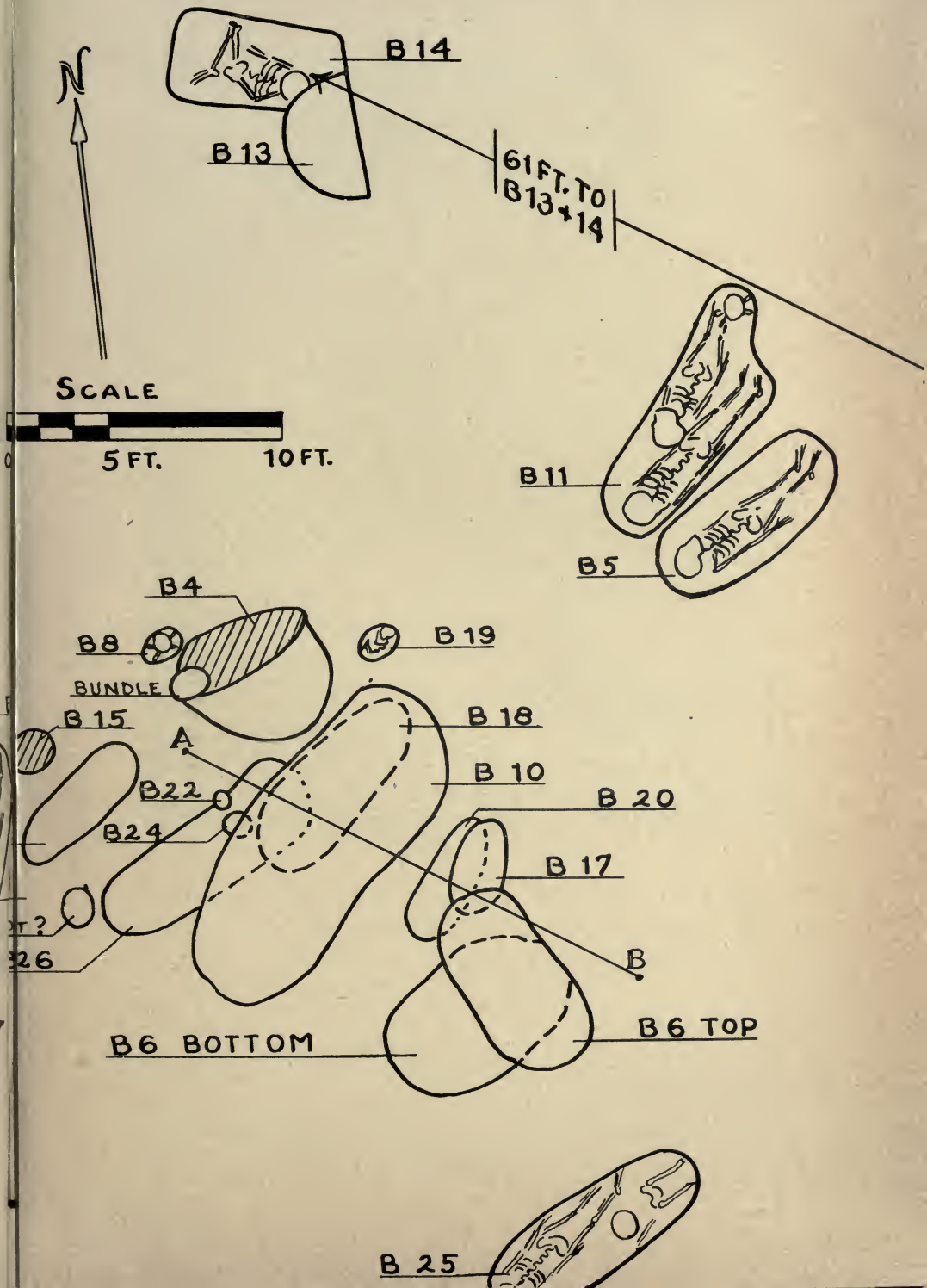
The second group of bones, seperated by about 10'' from the first group in a northeasterly direction, consisting of ribs, arm bones, pelvic fragments, a scapula, a mandible and other frgaments. As these bones were removed, fragments of tibiae and two patellae were discovered, duplicating the bones of the other group. The disarranged position of the bones suggests a secondary burial but as the burial was at the margin of the area disturbed by gravel removal this can not be eliminated as a possible source of disturbance.

Burial 7. This burial was the westernmost of the main mass of burials. It consisted of the remains of two individuals, evidently quite distinct and separate interments. One (A) consisted of the primary, fully extended burial of an adult, placed on the back with the head to the southwest. The skull was turned on its left side. The arms were extended along the side. Part of the lower limbs were missing, probably due to the action of the power shovel. On top of the right femur were placed the fragmentary remains of Individual B. They consisted of a bundle of bones including a mandible, two long bones, several vertebrae and ribs. In view of its placement and the fact that part of the bones of the right hand of In-





CROSS-SECTIONAL DIAGRAM


N
SCALE
5 FT.
10 FT.
B 14
B 13
61 FT. TO
B13+14
B 11
B 5
B 4
B 8
B 19
BUNDLE
B 15
B 18
A
B 10
B22
B 20
B24
B 17
B
B6 BOTTOM
B6 TOP
B 25

dividual A were missing, the grave for the bundle burial would appear to have been dug subsequent to that of the extended burial.

Burial 5. Two burials (B5 and B11) were found slightly isolated from the main mass, the southern margin of the burials being 8' to the northeast of the northern limits of the main burial group. The burials of this region were placed deep in the zone of fine sand. Since at this point the stripping operations for sand and gravel had penetrated to a greater depth, it is not possible to determine whether burials at a shallower depth had been removed by a power shovel. It is certain that shallow burials were present closer to the main mass of interments.

Measuring from the assumed surface height, the depth of Burial 5 was 33''. It consisted of a fully extended individual with the head oriented in a west by southwest direction. Both arms were extended along the side. The legs converged slightly at the knees with the lower limbs parallel to each other. With the individual was found an axe of elk antler (Figure 4, D), placed as though the handle had been grasped in the right hand and with the blade of the axe extending under the right femur. The axe is 40 cm. in length, the blade being 15.3 cm. in length and 5.5 cm. wide at the cutting edge. The handle tapers in diameter to a blunt tip and 5 cm above the end of the handle was a perforation 1 cm. in diameter. Several transverse notches are present in the vicinity of the perforation, perhaps to roughen the handle and provide a secure grip. The perforation, as in the case of the other antler axe, might permit a thong to be securely fastened to the axe so that the user might suspend it from from his wrist. Three projectile points (Figure 1, E-G) had been placed immediately to the north of the feet. Since these were not oriented in a uniform direction, it does not seem possible for them to have been attached to a shaft. The points are respectively 39, 40 and 46mm. in length (see Table 1 for complete measurements). The points were first shaped by percussion flaking and the edges subsequently retouched by pressure flaking. All are manufactured from chert, but of variable coloration and presumbably from different sources. In form, with shal-

Figure 5.

Top—Burial 14, in face down position with dog at side. Bottom—Burial 5 with elk antler axe clasped in right hand.

low side notches, they are quite similar to the larger knives found with burials previously described.

Burial 11. To the west and roughly parallel with the previously described burial, was a second group of individuals consisting of the remains of four persons. Individual A was a fully extended burial on the back with the head oriented to the southwest, the skull resting on its right side. In back

of the skull, at the occipital region, were two rounded blocks of soft sandstone. The arms were fully extended along the sides of the body and the legs were in a fully extended position, parallel to each other.

Individual B was also a fully extended burial, placed slightly to the northwest of Individual A and at a slight angle to it although the general orientation was still with the head to the southwest. The skull in this instance rested on the left side. Both arms and legs were fully extended, the arms resting at the side of the body. Placed between the forearm and the pelvis was a bone tube manufactured from the ulna of a swan (**Cygnus** sp.?). Both the proximal and the distal ends of the bone had been cut off and a series of notches had been cut along one edge (Figure 4, E). The right hand rested upon the base of a large (110 mm. in length) chipped stone knife manufactured from a mottled reddish-grey chert (Figure 1, H). The knife is similar in type to those previously described. Above the tip of the knife were fragments of antler which when reconstructed proved to be a hollowed section of antler 86 mm. in length. Its appearance suggested that it might be a portion of a handle, but if this is its function it was not attached to the knife at the time of burial. Beneath the distal end of the right femur were the complete bones of one lower leg of a great horned owl (**Bubo virginianus**). Resting across the knees was an apparently unworked ulna of a small mammal.

The outlines of the grave pits were revealed as a reddish sand in the lighter sand region. On this basis it would appear that Individuals A and B had been buried separately since each had a distinct pit outline which overlapped only where the two bodies were nearly in contact. Individual C consisted simply of a fragmentary skull found in an inverted position immediately to the northwest of the skull of A. It was located at a slightly shallower depth and may have no relation to the previously described burials. Individual D consisted of a bundle burial located so that the bones overlapped slightly upon the right foot of B. It is either contemporary with or later than this burial.

The final group of burials located at the site were found

in the wall of the bank on the western margin of the cut made in removing sand and gravel. These burials are 40' northwest of the westernmost burials of the main group. Two burial pits were found in the area, Burial 13 apparently being intrusive into the margin of Burial 14.

Burial 13. This was a compound burial in which three individuals had been placed in a small pit, perhaps about 3' in diameter (part of the pit was destroyed in the commercal operations). Individual A was a primary burial, flexted on the right side with the head to the south by southeast. The skull rested on the right side. Both arms were tightly folded against the chest with the hands under the face. The left leg was tightly flexed with the knee drawn up under the chin, thus forming an acute angle with the long axis of the body. The right leg was not as tightly flexed and forms approximately a ninety degree angle with the long axis of the body. a group of seven small disc beads (7-8 mm. in diameter) of shell were found at the left wrist. Beneath the chin of this individual, one end actually projecting up into the mandible, was a gorget of "sandal sole" shape made of marine conch shell. Since the burial was tightly flexed, however, the gorget may originally have been suspended on the chest. The gorget has a roughly elliptical outline and is 132 mm. in length and 51 mm. in width. Three perforations are present and aligned in the long axis, two being placed near one end of the gorget and the third slightly on the opposite side of the center (Figure 3, D).

Individual B consisted of the disarticulated bones of an adult. The skull rested in an inverted position (base upward). The mandible was also inverted in the southwestern corner of the pit, resting upon other bones. All of the major long bones were present, but were located both above and below the remains of the primary burial of Individual A.

Individual C consisted of the partially flexed burial of an adult female, placed in the bottom of the pit, below A and B. The body rested on the back with the head oriented to the south. The skull had either fallen forward so that the chin rested on the chest or the curvature of the pit forced it in this position. The arms rested at the sides but with the fore-

arms flexed tightly backward to rest on either side of the skull. The legs were tightly folded and compressed backward upon the body and slightly toward its left side. A group of 12 copper beads, spherical and slightly elongated in shape which ranged from 6-11 mm. in diameter were placed 1" above and 1½" east of the vertebral column. The central portion of the shafts of the leg bones were heavily stained by copper but no copper implement or ornament that could have produced this staining was found.

One possible interpretation that might be given for this burial is that all of the individuals were not interred at one time. Individual C certainly formed part of the original burial. At a later time this grave may have been reopened to add another burial and at this time the copper artifact responsible for the staining of the leg bones was removed. It is not clear whether Individual B may have formed part of the original burial or of the second burial. It is possible that the bones of this individual were disturbed and took their disarrayed position at the time of the second burial. Certainly the placement of bones above and below Individual A took place at this latter time.

Burial 14. This burial was located immediately to the north of Burial 13 and may have antedated it in time. The primary individual in the burial was in a partially flexed position, face downward, with the head oriented to the southeast. It had been placed in a pit 3.65' deep, 2-2.5 wide and approximately 5' in length. The legs were tightly folded and flexed to the left side of the individual at a right angle to the long axis of the body. The entire trunk and face of the person was in a prone position. The left arm was fully flexed to bring the hand under the left shoulder. The right arm had the forearm partially flexed, bringing the hand under the pelvis. A group of small, as yet unidentified bones were found in the pelvic region of this individual. The remains of a second individual were also in the grave and consisted of the skull (no mandible) and one long bone. The skull rested on its right side facing the south and the long bone was beside it to the east. The edge of the pelvis of the flexed individual rested upon the skull. Immediately beside the

flexed burial was a dog buried on its back with the head to the northwest. The skull is adjacent to the pelvis while the hind quarters of the dog are next to the shoulder.

Summary and Conclusions

To recapitulate the burial information we have prepared Table 1 which summarizes much of the pertinent data. It is essential to stress again that a single burial number can include several distinct burials. In reference to orientation of the head, one consistent feature emerges. 15 of the primary burials are oriented to the southwest, 5 to the south and 1 each to the southeast and south-southwest. On the other hand, only a single burial was oriented to the northeast and none to the east or west.

Table 1. Summary of Burial Information, Reigh Site

No.	Burial Position	Orientation of Head	Grave Goods	Individuals
25	Fully extended, on back(2)	SW	Chipped stone knife	2
6-top	Secondary (?)	—	None	3
6-bot.	Fully extended, on back (2); legs doubled backward over trunk (1); secondary (1); flexed (?) (1).	S(4)	Copper head ornaments; conical bone points; bird bones.	5
17	Secondary	—	None	2
20	Fully extended, on back	SW	None	1
10	Fully extended, on back (4); partial cremation (1 — ?)	SW(4)	Antler tip	5
18	Fully extended, on back(2)	NE	Copper point	1
24	Partial cremation	—	None	1
22	Disturbed; type (?)	—	—	1
26	Fully extended, on back (2)	SW(2)	Chipped stone knife; hematite pebbles; Copper point.	2
19	Fully flexed (?)	—	None	1
4	Partial cremation	—	None	1
8	Secondary (?)	—	Chipped stone point	1
21	Fully extended, on back	SW	Chipped stone point	1
15	Partial cremation	—	None	1
9	Fully extended, on face	SSW	None	1
23	Fully extended, on back	SW	Swan humeri; antler axe; hematite pebbles; chipped stone knife; copper point.	1
16	Secondary	—	None	1
12	Secondary (?)	—	None	2
7	Fully extended, on back (1); secondary (1)	SW	None	2

5	Fully extended, on back	SW	Antler axe; 3 chipped stone points	1
11	Fully extended, on back (2); secondary (2).	SW(2)	Bone tube; chipped stone knife; owl leg; mammal ulna; antler handle (?).	4
13	Fully flexed on side (1); secondary (1); partially flex ed on back (1)	S (1) SSE(1)	Sandal sole gorget shell and copper beads.	3
14	Partially flexed on face	SE	Dog	1
			Total No.	44

In the grave goods, it is possible to make a significant distinction in terms of size between chipped stone knives and chipped stone projectile points. We may assume that the objects placed in or near the hands were knives whereas those with other placement may well be projectile points. The range in size for these specimens is given in Table 2 and we may note that there is no overlap in range. The single point which seems almost intermediary in size (R9, Figure 1, J) is one found on the surface of the burial area by Mr. Edward Coumbes and because of disturbance we do not now know, through placement, whether it is actually a large point or small knife. Even including this point, however, the table shows no overlapping in the range in size of the two categories.

Table 2. Dimensions of Chipped Stone Knives and Projectile Points (in mm.)

Specimen No.	Length	Width	Stem Length	Thickness
Knives				
B25-1	75	41	14	10
B26-2	90	45	20	13
R3	81	43	15	14
B23-2	73	40	15	13
B11-1	110	53	14	14
Projectile Points				
B5-2	39	24	10	9
B5-3	40	26	11	8
B5-4	46	33	10	6
B21-1	27	22	6	6
R9	61	35	11	10

The probability exists that materials of a perishable nature, such as skins, may have been used in the burials. If they were, no evidence of their existence was found. Interpretation is therefore restricted to artifacts which survived to be recovered

in excavation. An insight into the functional aspects of the specimens recovered may be gained through their association with individual burials. Chipped stone knives were among the more common type of grave goods. Two of them were found as the only object placed in the grave. In both instances they were found with burials where the sex of the individual could not be identified with certainty. In one burial (B21) the skull was missing, but the post cranial skeleton appeared to be that of an adult female. In the second burial (B25) the remains appeared to have been a sub-adult male.

In burials where chipped stone knives were associated with other types of grave goods the identification could be made with greater certainty. A chipped stone knife, a conical copper point, and hematite pebbles were found with an adult female in Burial 25. In Burial 23 a knife, hematite pebbles, a conical copper point, cut swan bones and an antler axe were found with an adult male. Thus knives, hematite pebbles and copper points were associated with and presumably used by both males and females. On the other hand the antler axes were found only with males and may have been used by men alone. Since other types of grave goods were represented for the most part by isolated examples there is little justification for generalizations about their use.

An important question remains to be resolved is whether the series of burials we have described represents:

1) a single cultural complex in which the individuals were interred over a relatively short period of time or whether
2) this area was used for burial purposes over a long period by several cultural groups.

A general observation might be made first. The very concentration of burials appeared to indicate that a well defined area was being used for burial purposes by a given group of people. Sufficient time had clearly elapsed between specific burials so that many of them cut into older ones. Nevertheless they seemed to have been placed in an area delimited by custom rather than being scattered randomly over the ridge.

Linkages among the burials which can be used to build up evidence to evaluate whether we are dealing with a single

burial complex can be made on the basis of superposition of burials and also through the distribution of similar types of artifacts found among the different burials. In Burial 10 a sequence was established where burials were found in an extended position (lying on the back) followed by partial cremation and again by extended burials. Beneath the Burial 10 area were two fully extended burials (B18 and B26) with which were found copper points, a chipped flint knife and hematite pebbles as grave goods. Near this area the individual who was face down (B9) was interred later than the individual in Burial 23 who had a knife, an antler axe, a copper point and cut swan bones as grave goods. In most instances where secondary burials were found (B17, 16, 7 and 11) they appeared to be later than the primary burials. However, at least one secondary burial (B6) is of the same age as the primary burials.

The grave goods are characterized by a decided homogeneity at this site. Knives and projectile points were remarkably similar in form and the copper points were generally alike. Cut swan bones, antler axes and hematite pebbles were also found together in at least one instance. All of these artifacts were found with individuals who were interred fully extended, lying on their backs. These burials also tended to be somewhat older than other types of burials. There are several exceptions to this, however, in at least one instance an extended burial (B25) with a chert knife in the hand cut into an older extended burial lacking grave goods. Furthermore, contemporary burials of paired individuals also lacked grave goods. In addition, at Burial 10, a sequence of primary, partial cremation and primary burials was established, demonstrating that extended burials were not invariably earlier.

On the basis of grave goods alone we have no link between the major portion of the burials with the multiple interment consisting of a primary figure wearing copper head ornaments (B6) and the burial where the sandal sole shell gorget was found (B13). These finds are unique at the Reigh Site and not duplicated among the other burials. There is a possibility that these two burials and the secondary burials in general are somewhat later than the rest of the assemblage. However, taking into consideration the total body of evidence we are in-

clined to the view that this series of burials represents a single cultural complex.

The absence of pottery and of implements usually associated with agriculture suggests that the economy was still basically dependent upon the hunting of game and the gathering of wild plants for food. It is probable that there were no fixed habitation sites although for several generations this area was used as a cemetery by this group. There is also some suggestion that certain individuals within the group possessed higher status and there may have been recognized leaders (cf. B6) among them. The presence of the sandal sale shell gorget made from a marine conch shell is indicative of the existence of a widespread trade, possibly limited to luxury articles, for the nearest source of the shell was the Gulf of Mexico or the South Atlantic coast. The gorget found at this site is not unique in Wisconsin for Brown (1913) had earlier reported on the presence of one found a few miles away in a site along the west shore of Little Lake Butte des Morts.

Further evidence of the status of the Reigh Site is to be found in comparative data. Old Copper cultures of the Late Archaic in Wisconsin were, like the Reigh Site, characterized by having a clearly demarcated cemetery where primary and secondary burials were found in close association. At Osceola Ritzenthaler (1946) found conical copper points and side notched flint blades similar to the ones present at the Reigh Site. A closer parallel exists in the mortuary customs found at the Oconto Site (Ritzenthaler and Wittry, 1952). Extended, partially flexed, fully flexed, bundle and partial cremations were found here. In addition the relatively rare position of prone or face down burial was also found at Oconto. While there are marked differences in grave goods between the Oconto and Reigh sites, similarities may be noticed in the shape of projectile points and in the presence of hematite and antler tips. In general, relative to the Old Copper sites, there seems to be an attenuation in both types and numbers of copper artifacts at the Reigh Site.

Aside from connections with the Old Copper culture in Wisconsin, relationships are also evident with Glacial Kame culture. The sandal sole shell gorget found at the Reigh Site

(B13) has almost become a diagnostic artifact for this culture. Many of the traits observed at the Reigh Site are found in Glacial Kame sites elsewhere. Matson (1856, as quoted in Cunningham, 1948: 12-18) reported on the Ridgeway Site in Hardin County, Ohio. Sandal sole shell gorgets were found in some of the burials together with chipped stone artifacts, copper implements, shell and copper beads. Varied positions of interring the dead also seemed to be characteristic. Extended, face down, flexed burials and secondary cremations were reported. In addition dogs were found buried beside human skeletons as in Reigh B14.

The Picton Site in Ontario, Canada, is one of the few Glacial Kame sites excavated in recent years (Ritchie, 1949). It shared the trait of having a very diverse pattern of burials with cremations, flexed, bundle and extended burials present. Copper, flint and marine shell artifacts, including the sandal sole shell gorget, were present.

It is apparent that there are a number of general resemblances, particularly in mortuary customs, among the sites where the sandal sole shell gorget has been found. However, the general status of Glacial Kame as a culture is obscure. This is primarily due to the small number of sites which have been excavated with modern methods. In view of this we cannot, at the present time, isolate instances in which a sandal sole shell gorget may be present simply as a trade object or whether we are dealing with a cultural complex.

There is also some disagreement about the temporal position of Glacial Kame. In recent years there has been a general tendency to place it at a somewhat earlier time than had been previously in vogue. At one time Griffin (1948) stated that:

> ". . . the Glacial Kame artifacts suggest that they belong to a Woodland burial complex toward the close of the Hopewellian or Middle Woodland period near the beginning of the period of spread of Middle Mississippi."

He has since (1952: 356) placed it at the end of the Late Archiac. On the other hand Ritchie (1949) specifically considered the Glacial Kame, from the evidence at the Picton Site,

to be Early Woodland in date. A number of other archeologists (Quimby, 1952: 101; Morgan, 1952: 86) concur in an Early Woodland assignment for Glacial Kame.

In summary, the Reigh Site is characterized by a similar varied disposition of the dead as found at the Late Archaic Old Copper Site at Oconto. Further relationship is seen in the persistence of many other Late Archaic traits, such as the use of copper artifacts of the same type found at Old Copper sites. However the general attenuation in both quantity and type of copper artifacts sets the Reigh Site apart from Old Copper cemeteries. It therefore seems seasonable to assign the Reigh Site to the Early Woodland period and to suggest that the burial complex which characterizes Glacial Kame in Wisconsin was of this date. Thus the site serves to increase our knowledge of one of the least known periods in Wisconsin ranging in time about one thousand years before the Christian era.

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The Directors of the Wisconsin Archeological Society at the January, 1954 meeting voted to place the society on a 1 January fiscal year basis, commencing 1 January, 1955. Members whose dues are payable 1 January, 1954 thru 30 June, 1954 will be credited to 1 January, 1955. Members whose dues are payable 1 July, 1954 through 31 December, 1954 will be credited to 1 January, 1956. The Wisconsin Archeologist will continue to be mailed to all paid-up members.

BIBLIOGRAPHY

BROWN, C. E.
1913. The Occurence of Marine Shells on Indian Sites in Wisconsin. **The Wisconsin Archeologist,** o. s., vol. 12, No. 2, pp. 53-63.

CUNNINGHAM, W. M.
1948. A Study of the Glacial Kame Culture in Michigan, Ohio and Indiana—With an Appendix by James B. Griffin. **Occasional Contributions from the Museum of Anthropology of the University of Michigan,** No. 12.

GRIFFIN, J. B.
1948. An interpretation of Glacial Kame Culture. (Appendix in the paper by Cunningham—see above).
1952. Culture Periods in Eastern United States Archeology. **Archeology of Eastern United States.** The University of Chicago Press, pp. 352-364.

MORGAN, R. G.
1952. Outline of Cultures in the Ohio Region. **Archeology of Eastern United States,** pp. 83-98.

QUIMBY, G. I.
1952. The Archeology of the Upper Great Lakes Area. **Archeology of Eastern United States,** pp. 99-107.

RITCHIE, W. A.
1949. An Archeological Survey of the Trent Waterway in Ontario Canada and its Significance in New York Prehistory. **Researches and Transactions of the New York State Archeological Association.**

RITZENTHALER, R. E.
1946. The Osceola Site—An "Old Copper" Site Near Potosi, Wisconsin. **The Wisconsin Archeologist,** n. s., Vol. 27, No. 3, pp. 53-70.

RITZENTHALER, R. E. and WITTRY, W. L.
1952. The Oconto Site—An Old Copper Manifestation. **The Wisconsin Archeologist,** n. s., Vol. 33, No. 4, pp. 199-223.

WITTRY, W. L.
1951. A Preliminary Study of the Old Copper Complex. **The Wisconsin Archeologist,** n. s., Vol. 32, No. 1, pp. 1-18.

MOUND GROUP OPPOSITE AZTALAN

By T. M. N. Lewis

This is a belated report on a minor investigation made in 1929 which I have been urged to write up, despite the very limited data available.

The excavation was made in one of a group of small dome-shaped mounds situated approximately opposite the Aztalan site, across the Crawfish River. I am not quite sure whether this mound is shown in the plat on page 253 of Barrett's **Ancient Aztalan**, or whether it belongs to another group of six mounds referred to on page 254 as being "about half a mile to the east." The mound in question was about three feet in height and twenty feet in diameter. Redeposited soil encircling the base indicated that its original contours had been altered by frequent cultivation. This suggests that originally the mound may have been conical rather than dome-shaped and not much more than 10 or 12 feet in basal diameter.

Vertical slicing along one side of the mound eventually exposed a burial at the center of the mound floor. It was an adult male about forty-five years of age, lying upon the back in an almost fully flexed position with leg bones bent to the left, as shown in the accompanying time-worn photograph (Figure 1).

The rather large skull (stored in my office at the University of Tennessee) is broad and high, with a very sloping forehead and prominent brow ridges. The face is only moderately broad; the nose is of medium breadth and high-bridged; and the eye sockets are rhomboidal in shape.. There is a slight amount of prognathism, and the lower jaw is broad, with strong muscle attachments. The following table gives the skull measurements and indices:

	Length	Breadth	Height	
Cranium	171mm.	147mm.	141mm.	(basion to bregma)
Nose	54mm.	26mm.		
Face		141mm (bizygomatic)	74mm.	(nasion to alveolar point)
Orbit (left)	39mm.		37mm.	

Figure 1. Flexed burial found as base of mound.

Cranial index	85.9
Mean height index	88.9
Cranial module	153
Upper facial index	52.4
Nasal index	48.3
Orbital index	94.8

Except for its breadth, the skull is the type often found associated with Hopewellian culture traits and called Lenapid by Neumann *. The skull is shown in Figure 2.

Associated with the burial was the monitor pipe form shown in the accompanying illustration (Figure 3). It is made of weathered, fine-grained rhyolite, purplish gray in color and highly polished. Nine "tally" marks are present along the lower, left-hand front edge. The basal length is 109 mm., and its maximum width, just below the bowl rim, is 29 mm. The sides slope inward to the base to a width of 17 mm. below the bowl. The pipe tapers evenly toward the front where it ends in a sharp, vertical edge 4 mm. high. The mouthpiece at the opposite end is 10 mm. in width. The incurved base is slightly rounded laterally, but meets the sides at an angle; the distance from this angle to the outer rim of the bowl is 33 mm. The

* Neumann, Georg, 1952, p. 24.

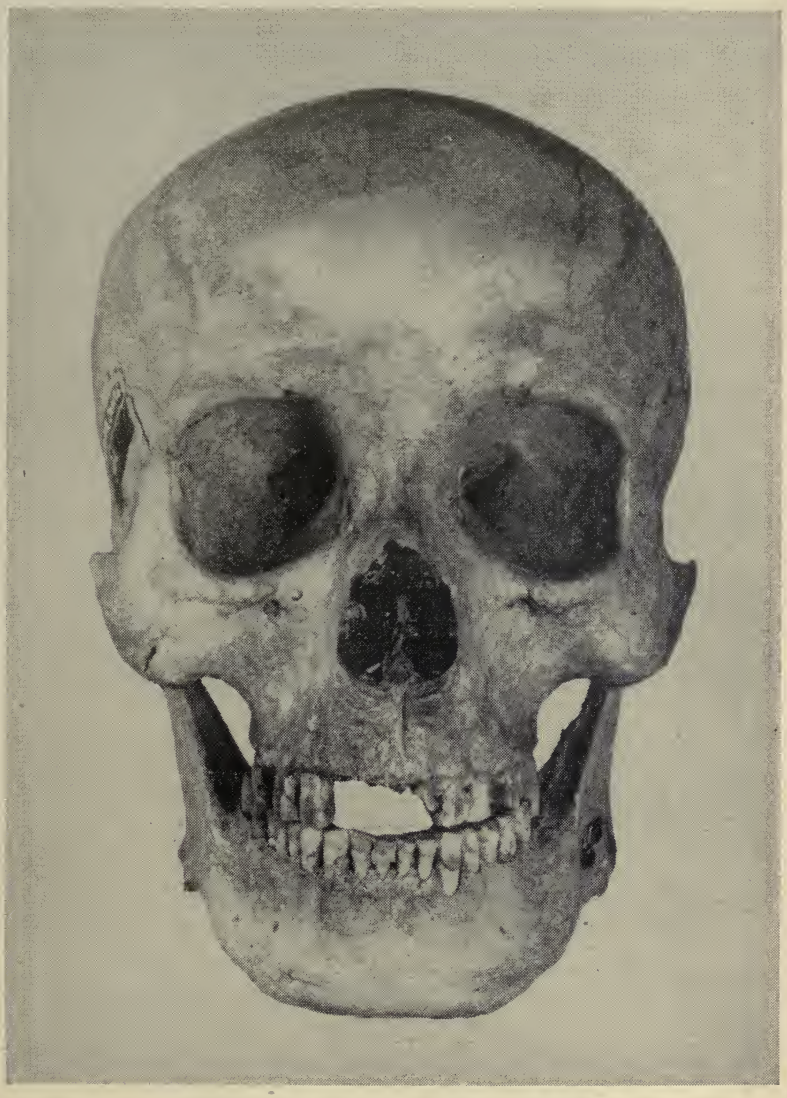

Figure 2-A. Front view oī skulll.

hole at the mouthpiece is 4 mm. in diameter, and it connects with the interior of the cylindrical bowl at a distance of 3 mm. above its bottom.

My attention has been called to significant similarities be-

Figure 2-B. Side View of Skull

tween this pipe and one illustrated on page 308 by Schultz and Spaulding in "A Hopewellian Burial Site in Kansas," hence it has seemed advisable to give the measurements in some detail. The reader may be interested also in comparing this specimen with the curved-base monitor pipes from the Crooks site in Louisiana which belongs to the Marksville per-

Figure 3. Pipe found with burial.

iod, a variant of the Hopewell culture. While these are made of pottery rather than stone, there is considerable similarity to b, c, and d in Figure 52 on page 117 of the report by Ford and Willey.

Two incomplete monitor pipes from the Aztalan site are figured in Barrett's report, but their curved bases are thin and broad like those from the Ohio Hopwellian sites. There is no information that I am aware of to indicate the chronological relationship between the two forms of curved-base monitors; nor can we be sure that the rhyolite specimen simply represents a modification of the broad-based form.

References Cited:

Barrett, S. A., 1933. "Ancient Aztalan", pp. 253-254. **Bulletin of the Public Museum of the City of Milwaukee,** Vol. XIII.

Ford, J. A. and Gordon Willey, 1940. "Crooks Site, A Marksville Period Burial Mound in La Salle Parish, Louisiana", p. 117. **Anthropological Study No. 3,** Department of Conservation Louisiana Geological Survey.

Neumann, Georg K., 1952. "Archeology and Race", pp. 13-14, in **Archeology of Eastern United States,** ed. J. B. Griffin. The University of Chicago Press.

Schultz, Floyd and Albert C. Spaulding, 1948. "A Hopewellian Burial Site in the Lower Republican Valley, Kansas", pp. 308-309, **American Antiquity,** Vol. XIII, No. 4.

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FURTHER INFORMATION ON THE FROST WOODS MOUND GROUP (Da1)

David A. Baerreis

Although many of the noted mound groups in Wisconsin have disappeared, some of those mapped at an early time are still in existence though frequently much reduced in numbers. One such mound group is the Frost Woods Mound Group, located near the outlet of Lake Monona on the outskirts of the city of Madison. It is one of the sites surveyed in 1850 by Wisconsin's pioneer archeologist, Increase A. Lapham. In Lapham's map of the area (Lapham, 1855: Plate XXXIII), the Frost Woods group is represented by the bird and linear mounds in the upper left hand portion of the plate. The circular group of conical mounds are the mounds of the Outlet Site (Da3) where recent excavations have been conducted (Whiteford, 1949; Bakken, 1949). The Frost Woods Group was subsequently illustrated by Rev. S. D. Peet (1892, fig. 172) and described in greater detail by Charles E. Brown (1922: 148-150).

The area occupied by the mound group has been subdivided into lots for residential building purposes and in 1947 one conical mound was due to be disturbed by the construction of a home. Through the cooperation of the property owner, Mr. R. J. Harker, it was possible to excavate the mound prior to its destruction. Subsequent to the publication of his report on this site, Mr. Brown had also conducted additional excavation at the site. This report is concerned with placing on record the results of the limited 1947 excavations as well as the most recent work of Mr. Brown whose manuscript

records are preserved in the archives of the State Historical Society of Wisconsin.

Mr. Brown reported (1922: 149) the testing of two of the linear mounds (numbers 4 and 5 on his map of the group). Trenches indicated that they were constructed of clay with a thin layer of black soil above, but no burials or artifacts were found. In 1928, Mr. Brown conducted more excavations in the bird effigy. A trench 3.5 feet in width and 50 feet in length was dug from the fork of the tail through the body and head of the effigy. At the center of the body, the width of the trench was increased to 4.5 and 5 feet. Pits were also dug in each wing, one at its union with the body, one near the middle of the wing, and one within about 6 feet of its tip. The central trench was carried not only through the mound fill, a depth of 2 to 3.5 feet, but also for a depth of 2 feet or more into the clay to avoid any possibility of missing a burial or other features. The result of this work was simply an indication of aspects of mound construction since no burials or other features were discovered. The mound was built of black surface soil, quite free from stones with the exception of a few rounded ones near the mound base which had apparently been thrown in with loads of earth. Near these were a small deposit of yellow clay and one of greyish soil, the latter being interpreted as probably marl from the shores of Lake Monona. There was no suggestion of sub-floor pits in which burials may have been placed, nor was there any indication of an intaglio beneath the mound before its construction.

The excavations carried on in 1947 as salvage operations were conducted in the mound indicated as Number 7 on Mr. Brown's map (1922: Plate 7). Because of the limited time available, it was felt only the central portion of the mound could be excavated. A trench, ten feet in width, was carried in from the north edge of the mound for a total distance of twenty-five feet. Although this brought the trench through the center of the mound, it did not complete a cross-section of the mound which roughly had a diameter of thirty-five feet and a maximum height of 2.7 feet.

Mound profiles indicated that the mound proper was com-

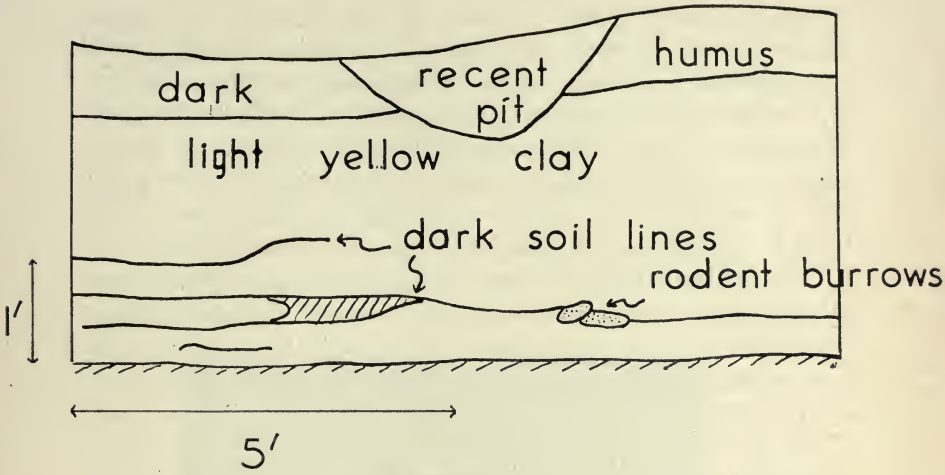

Figure 1

posed of a light yellow clay which showed no significant changes except for a dark humus soil .5' in thickness and a dark line of soil at the base of the mound. This dark soil line at the base was interpreted as remnants of an old soil line upon which the mound was constructed except that near the center of the mound this soil line was doubled in some sectors (Figure 1). Ten feet from the edge of the mound, at a depth of 42-54 cm. below the surface, a section of antler was discovered. It was inclined with the point down at an angle of approximately 30 degrees. There was no evidence to indicate that this was other than an accidental inclusion within the mound fill. The antler was in a fragile condition, bore several transverse fractures and the outer surface had eroded through decay. Though the antler section was large and heavy, it lacked secondary tines. Possibly these had been removed to fashion the antler into an implement. The general form suggested that it may have served as a pick. The dimensions as measured **in situ** gave a length of 29.5 cm., and a diameter at the base of 2.5 x 3.5 cm.

As the excavation proceeded toward the center of the mound, the outline of an excavation from the surface which preceded our own could be seen in the profile. The uppermost limits of this intrusive pit are to be seen in the profile

shown in Figure 1. Near the base of this pit was encountered an articulated skeleton of a pig. No portions of the animal appeared to be missing with the possible exception of the tail which might well have decayed or was lacking when the animal was buried. The only plausible explanation of the presence of this animal was that it either had died of some disease and had been intentionally buried in the pit or that it had fallen into an open pit and being unable to get out had died there and later been covered with soil. The excavations were carried below the level at which the pig skeleton was found and at the base of the mound the outline of an oval subfloor burial pit was discovered. The dimensions of the pit were 110.5 cm. (N-S) and 64 cm. (E-W). The outlines of the pit are regular and symmetrical. That this pit had already been excavated was indicated by the presence of decomposed leaf mold and thin horizontal laminations suggesting a gradual filling of an open pit by fine sediments carried by rain water. Bone material was confined to a few teeth (adult) and a few splinters of the mandible. Since these were located at the south end of the pit, a possible indication of orientation of the body is given. The size of the pit would necessitate that the burial be either a primary flexed burial or a bone reburial. A small, triangular projectile point was found 4 cm. above the base of the pit 48 cm. from the southern edge of the pit. The projectile point may not be an intentional grave offering since there is always the possibility that the point may have been imbedded in the body at the time it was interred, or, as an even remoter possibility, it could have been an accidental inclusion in the earth fill.

Because of the presence of the excavation which contained the pig immediately above the burial, as well as the indication that the burial pit had been opened by recent excavators, it is impossible to determine with certainty whether or not the grave was an inclusive or intrusive one. However, there are several factors which suggest that the burial must represent an inclusive inhumation in the mound. The burial is the only feature discovered in the mound by a relatively extensive excavation and it is centrally located as far as the mound is concerned. Therefore if the burial was not the reason for the

construction of the mound, we are left with an apparently purposeless construction lacking even an effigy form to which some assumed function could be attached. It seems therefore probable that the burial does represent the people who constructed the mound and that consequently the projectile point represents either part of their cultural equipment or that of a contemporary goup.

Despite fairly extensive testing in this mound group, the only concrete bit of cultural evidence is the single projectile point mentioned above. The point is triangular in outline,

Figure 2
Triangular Projectile point found in burial pit of Mound 7, Frost Woods Group. 1½ times natural size.

having a length of 30 mm., a width of 21 mm., and a thickness of 3 mm. (Figure 2). The sides and base are roughly straight and the sides of the body bear fine serrations spaced about 1 mm. apart. The material from which the point is made is a grey-white chert.

Summary and Interpretaton

The Frost Woods Mound Group as a whole would appear to belong to the Effigy Mound Aspect since this is the only complex known to build effigy and linear mounds in the state. The Effigy Mound people also used conical mounds extensively although this practice is not confined to them

since many of the other cultural units in the state also build mounds of that form. However, the practice of having a small, slightly excavated sub-floor burial pit below the mound floor, such as the one in Mound 7 of the Frost Woods Group in which the projectile point was found is a characteristic practice of the Effigy Mound culture and suggests that this mound, like the other mounds in the group, may be of that culture. The presence of a triangular point in the grave pit is of particular interest since, in general, such triangular points are found in late horizons in Wisconsin. The form is characteristic of both Upper and Middle Mississippi cultures, the cultural type found at Aztalan (Middle Mississippi) and at the various Oneota sites—Lake Winnebago Focus, Grand River Focus, and Orr Focus—complexes which have their closest affiliation with the Chiwere Siouan tribes (Upper Mississippi). The point would therefore suggest that the mound was built at a relatively late time and indicates contact of some sort with the later Mississippi peoples. This would then imply a duration of the Effigy Mound culture in the Madison area from the Middle Woodland Period, as shown by the Blackhawk site (Baerreis, 1953), through to the Mississippian Period.

This is, however, but a tentative suggestion. The fact that at the Frost Woods site we have a series of mounds found in close proximity makes us tend to consider the whole group as a unit and regard the entire series of mounds as the activities of one group of people. It is quite possible that the mounds were built by a single cultural group, returning to the area year after year and adding to the burial mounds as needed. But on the other hand, quite distinct cultural groups might also enter the region and build their mounds in the same general area. It is evident that the archeological analysis of this material must proceed mound by mound, not by lumping the traits of the mound group. From this point of view, we must retain as a distinct possibility that the small conical mound (No. 7) might have been built by a later Mississippian group, or a Woodland group with Mississipian contacts, and that only the effigy and linear mounds are to be classified as part of the Effigy Mound Aspect at this site.

References Cited

BAERREIS, DAVID A.
1953 Blackhawk Village Site, (Da5), Dane County, Wisconsin. **Journal of the Iowa Archeological Society,** Vol. 2, No. 4, pp. 5-20.

BAKKEN, CHARLOTTE T.
1950 Preliminary Investigations at the Outlet Site. **The Wisconsin Archeologist,** Vol. 31, No. 2 (new series), pp. 43-66.

BROWN, CHARLES E.
1922 Lake Monona. **The Wisconsin Archeologist,** Vol. 1, No. 2 (new series), pp. 119-167.

LAPHAM, INCREASE A.
1855 Antiquities of Wisconsin. **Smithsonian Institution, Contributions to Knowledge,** Vol. 7, Article IV, pp. 1-95.

PEET, S. D.
1892 **Prehistoric America.**

WHITEFORD, A. H.
1949 A Report on the Outlet Site on Lake Monona. **The Wisconsin Archeologist,** Vol. 30, No. 1 (new series), pp. 22-35.

FOUND — AN INDIAN FIGURINE

T. F. KOUBA

A complete unbroken Indian figurine of fired clay was found by the writer in Marquette County during the spring of 1953. With dimensions of 43 mm. in length, 19 mm. in width, and 14 mm. in thickness, its facial features are surprisingly distinct, including a classic Roman nose (Figure 1). It was made without arms or legs. The figurine was fired to a uniform reddish brown color and has a hardness slightly less than that of a penny. No grains of temper are visible in the clay though several angular holes are to be seen on the surface, perhaps where particles of temper have decayed. The absence of tempering material increases the difficulties of making comparisons with the many potsherds I was also fortunate enough to find at the same location about two miles south of Montello, Wisconsin. The geographic description is the Northeast Quarter of Section 27, Township 15 North, Range 10 East. Present owner of the land is Gilbert Radke.

The campsite is located on a sand blow. An oak tree perhaps 150 years old indicates by the exposure of the upper

Figure 1

portion of its large roots that the ground level now is a few feet lower than when the tree was a seedling. From this campsite extending to the east and south is a large grass swamp that may have produced food in the form of wild rice for these early people. About a quarter of a mile to the northeast is the well-known Fox River that runs in an easterly direction. This stream may have helped to make the site a desirable one for many centuries, judging by the quantities and types of sherds found there. Successive camps, oftentimes at different ground elevations presumably, were established at this site. The shifting sand, moved by winds since the Indian occupation, has exposed the artifacts so that today they are deposited at a more or less common level.

The story of the people who lived here centuries ago can best be determined by a professional anthropologist rather than by the writer who enthusiastically looks for Indian artifacts and delves in the subject as a genuinely fine avocation,

but who does not deal with it as a profession. I showed the figurine and potsherds, shortly after they were found, to Dr. David A. Baerreis, Professor of Anthropology at the University of Wisconsin. It was about two months later that we examined the site together at which time we found many more sherds and a few stone artifacts. Dr. Baerreis has been kind enough to examine in the laboratory the figurine and the sherds and has provided for the various pieces the following details that only a professional archeologist could recognize.

The oldest pottery found were a few sherds of a rather thick ware with abundant, coarse grit temper. The surface is cord-roughened and bears as a decoration a series of incised lines of short length and seemingly random spacing. The sherds may be related to the incised-over-cord-roughened style of decoration found on pottery of the Early Woodland Period, presumably from 2,000 B. C. to 1 A. D. The fact that the pottery is not abundant makes precise identification difficult, but it appears that any occupation of the site at this early period was of limited duration.

Grit tempered Woodland sherds were found at the site in almost equal abundance to that of the Upper Mississippi group which followed. However, while the Upper Mississippi pottery is rather homogeneous in characteristics and probably was deposited at the site during a relatively short time period, the Woodland pottery is extremely varied and probably represents a number of distinct types at the site over a long time span.

Somewhat more abundant are a series of sherds suggesting a placement within a Middle Woodland Period of 1 A. D. to 1,000 A. D. Rim sherds of this type exhibit a smoothed, squared lip and a decoration consisting of embossed nodes punched from the interior wall of the vessel and imprints of a cord-wrapped stick, also on the interior rim of the vessel. Surface finish of rim sherds of this variety are generally smooth though partially smoothed cord-roughened is also present. A body sherd also suggests the characteristic style of decoration in having alternate smooth and cord-roughened areas, set apart by an incised line.

The Woodland sherds also include a relatively thin-walled

variety with a sharply angled shoulder area. Although the typical cord imprinted decoration was not found, the sherds seem quite similar to the pottery of the Effigy Mound culture.

In general, of course, the bulk of the cord-roughened body sherds cannot be assigned to a specific time period or culture.

The most abundant pottery type gathered in the surface collections is a plain exterior, shell tempered type. While the tempering has generally leached from the pottery, small pits revealing its former presence can be seen. The surface is generally smooth and occasionally polished though this polishing may in part be due to sand action. Surface colors are a light shade of tan, red, and red-brown but frequently these have a darker color in the core. Few sherds bearing a decoration were found but it should be pointed out that the shell tempered pottery tends to split parallel to the surface contours and this may tend to destroy surface decoration. Small decorated sherds bore a shallow incised decoration or a slight crimping of the rim. The features and the slight clues concerning vessel shape suggest that this pottery type belongs to the Upper Mississippi variety of the period 1,000 A. D. to 1,600 A. D., probably related to that of the not too distant Grand River Mound Group and Camp Site.

A few shell tempered sherds, similar in most characteristics to the type noted above, bear a surface modification which might easily be dismissed as a partially smoothed cord-roughening. Impressions made at the University with plasticene, however, indicate that it consists of the mark of a loose fabric or net with the mesh spaced at slightly more than a quarter of an inch. Although this variety of surface modification has not been reported for the area, it is probably a part of the Upper Mississippi complex.

In summary, the Woodland pottery suggests a sporadic occupation of the site by cultural groups of this type over an extended time period, possibly from the Early Woodland Period up to as late as a thousand years ago. The most abundant evidence of occupation at the site, indicated by the pottery, is that of Upper Mississippi peoples, dating about 1,000 A. D.

It is my understanding that to find in Wisconsin today an Indian figurine of a human being is rare indeed. Although

its exact age remains a mystery, it was probably made at about the same time as one of the pottery types found with it. A precise placement in time must wait upon the reporting of additional figurines in a clearer cultural context.

A UNIQUE CERAMIC EFFIGY

Warren L. Wittry

Spring is the time of year for the archeological harvest. The interval between the disappearance of snow and the first plowing leaves the fields covered with small stones and, on those fields which mark the habitation sites of Indians,

flint chips, arrowheads, potsherds, and other evidences of occupation are found. On April 11, 1942, I was crawling on my hands and knees (as any collector worth his salt would do on a rich site) through a field overlooking the head of Green Bay when I discovered the pottery effigy shown above. The exact location is in the N½, NE¼, Sec. 27, T24N, R21E, Brown Co., Wis.

To me, the effigy resembles a bear, though friends of mine have suggested it might represent a dog or some other canine. Because of its small size and the nature of the material, the characteristic details which allow identification of the species are not present. It is made of a fairly well fired clay, sparsely tempered with small pieces of grit. The tip of the tail is broken off but it probably wasn't much longer than it is now.

We can only guess as to the purpose for which this object was made. It may symbolize a clan totem or it may have had a religious or magical function. Perhaps it was a mere toy constructed to delight the heart of an Indian boy or girl.

The site appears to be of the late historic period. Six small

triangular arrowheads, a slightly flattened tubular catlinite bead, and "cell"-tempered pottery of the type attributed to the Upper Mississippi culture were also found.

WOODLAND POT FROM DODGE COUNTY

Robert E. Ritzenthaler

The finding of complete pottery vessels in Wisconsin is a rare occurence. The Woodland vessel illustrated here was found in a conical mound above a burial on the south shore of Fox Lake in Dodge County. It was placed in the mound as a whole vessel and thus it was found, but earth pressures had badly cracked it, so it had to be removed in pieces. Restoration was a simple task, although warpage was so consid-

erable as to destroy the original symmetry. Besides warping due to earth pressures, the firing of any pottery vessel sets up stresses and strains that alter the shape of a pot once broken. This vessel is globular in shape with a fairly rounded bottom, rather than the conoidal base (so characteristic of Woodland). Except for the bottom, the exterior is cord-marked. The ware is thin and fairly hard, with grit tempering.

In reconstructing the picture with the aid of amateurs

who excavated the site, it seems apparent that the vessel was associated with a burial directly below it. The bones, in excellent preservation, were those of an adult male about 60 years of age. The skull, however, is somewhat unusual for Woodland. It is high, and rather wide. The cephalic index is 80 which makes it more brachycephalic (broadheaded) than crania ordinarily recovered from Woodland mounds.

THE 1954 ANNUAL DINNER AND CONVENTION

The editor, on behalf of the Wisconsin Archeological Society, takes this opportunity to compliment the Charles E. Brown Chapter on the excellent planning and arrangements that made the May 15th meeting at Madison the success it was.

The morning was given over to a museum Open House at the State Historical Museum featuring the new display of the Hamilton copper collection and the recently excavated materials from the Reigh site.

The afternoon session, held at the Museum, was devoted to Chapter reports and papers. After a witty welcoming address by Dr. John Jacques, Chief of Administrative Services of the State Historical Society, the following Chapter reports were made:

Milwaukee, Dr. E. G. Bruder, Past President
Green Bay, Henry Bredael, President
Madison, W. L. Wittry, Treasurer

With Dr. David A. Baerreis acting as chairman, papers were presented as follows:

W. C. McKern, "The Amateur and the Professional."
W. D. Logan, "Effigy Mounds National Monument"
Mrs. C. E. Brown, "A Page from Birchbark Tales"
E. G. Bruder, "Scale Drawings of Wisconsin Effigy Mounds"
D. J. Mack, "A Metallographic Analysis of a Copper Specimen from Oshkosh"
R. L. Hall, "Early Historic Fox Indian Villages"

The Annual Dinner of the Wisconsin Archeological Society was held at 6 P. M. in the Round Table Room of the Wiscon-

sin Memorial Union. A total of 55 members were in attendance including 26 members from out of town. Mr. T. F. Kouba, Past President of the Madison Chapter, introduced Mr. A. W. Quan, current President of that Chapter and Mr. Kermit Freckmann, President of the Milwaukee Chapter, who gave short addresses. A lecture with motion pictures on the Mexican Kickapoo Indians and archeological sites of Mexico was presented by Dr. Robert Ritzenthaler.

Again, our thanks to the host Chapter, and to all the individual members who worked to make it a success.

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Milwaukee, Wisconsin

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ABORIGINAL FOOD UTILIZATION OF VEGETATION BY THE INDIANS OF THE GREAT LAKES REGION AS RECORDED IN THE JESUIT RELATIONS

Wilma F. Aller

Although in recent years there have appeared in the anthropological literature many reports of the uses of vegetation as food by the American Indans, it is found that most of these have been obtained from interviews with older members of a tribe and often reflect some influence of the civilization of the "white man." It is not often that one is fortunate enough to obtain information which has not been modified by some European traits, but history has provided one good source—the **Jesuit Relations**—letters written by the black-robed priest to his superiors and friends, of his wanderings, observations and work.

It is hard sometimes to realize just how primary this material is. The Jesuits came early to the shore of Nova Scotia in 1611, some years before the landing of the Pilgrims at Plymouth. They were not the first to come; but followed the fur-trader. It is noted, however, that the missionaries contacted most of the Indians before civilization had seriously affected them. The Jesuits were trained not only as followers and leaders of a faith; but were careful scholars and their observations are considered authentic.

It is for these reasons that the author feels that the information to be presented will prove helpful in giving a clear idea of the pre-contact Indian and his use of part of his environment and in turn the influence that the environment had on his life.

The Jesuits labored generally in the Great Lakes region and from these Lakes into many of the tributaries. There

were three routes taken by the Fathers—all out of Lake Michigan. The first went up the St. Joseph's and into the Wabash; the second up the Chicago River, by portage across into the Kankakee and then into the Illinois; the third (the route taken by Marquette and Joliet) ascended the Fox and descended the Wisconsin to the Mississippi. The Fathers also went west and east along the Great Lakes (Peabody, 1887). This means we could consider many various tribes; but we will find that most of the information was obtained about the Hurons, some of their neighboring tribes and many of the Wisconsin Indians.

The problem before us is to discuss the uses of the vegetation by the Indians at the time they were under Jesuit influence and as this was recorded in the **Relations.** It is our belief as it is of others "that the cultures of primitive man are less independent of his immediate environment than those of more civilized people" (Sears 1932). It will be interesting to note how this principle holds in this area which we are discussing.

In order to better understand what possible vegetation could have been used by these Indians, we feel a discussion of what might have been there would prove useful to the reader. Since our discussion is restricted mostly to the area just above and below the Great Lakes, we find that we are concerned with three main areas of vegetation. They are the boreal, hemlock-hardwood and deciduous forests (Curtis 1991, Oosting 1948 and Weaver 1938).

The boreal forest extends from Newfoundland on the north to New England on the south. It touches the Great Lakes region, goes across Saskatchewan and along the Rocky Mountains and then to the Pacific coast in Alaska. The growing season is short—from June to August—and cool. Winter is cold. Glaciers have played a predominate role in the formation of the topography. Lakes are everywhere and bogs are also abundant. The mineral soils are shallow and low in nutrient content.

The climax forest is of white spruce and balsam fir and is best developed in and around the St. Lawrence River. Birch is a constant associate with them. Typical lesser plants on

the shady floor include aster, dwarf dogwood, clintonia, blueberry, violet, anemone, bracken fern and many others. A subclimax forest of white pine is present and on the less favorable sites, red pine and jack pine are found. It should also be noted that red oak is present in this association. It is in this boreal forest that we find many of the lichens that shall be referred to in this paper. In the numerous lakes are the rushes and reeds that were used by the Indians.

The deciduous forest occupies all of the Eastern United States except southern Florida. It gives way to the conifer forest along Canada and to grassland in the west. The forest form differs widely because of the great variance in topography and soil. Any of several hardwoods may be found. In this northern hardwoods area the climax is the maple, basswood forest. In addition oak, hickory, elm, black cherry, ironwood and others are often found. It is also here that towards the prairie that the oak opening may be maintained. Many small flowering shrubs are found increasing in variety toward the deciduous forest center somewhere in the Appalachians. Herbs are prevalent with many showy species as trillium, anemone, violet and lady slippers blooming in the spring. In the fall asters and golden-rods dominate the aspect.

In between these two forests must be put a special type of deciduous forest known as the hemlock-hardwood association. Hemlock is the important, constant member together with sugar maple, yellow birch, basswood, red-oak, and other species. Cedar, tamarack and black spruce are found in the bogs. The floor has much the same aspect as that of the deciduous forest.

This then gives us a summary of some of the vegetation that the Indians could have drawn upon for the varied aspects of their life. As one can see the forest is an important feature to be considered. This paper will discuss only the area of vegetation as food or agricultural products with no hope of ever exhausting the list; since, as can be seen from the ecological discussion, the plants are extremely varied.

Because these Indians lived in fairly productive forest we would expect them to use the fruits of the trees. On of the conspicuous trees of the deciduous forest is the oak, which

usually produces a sufficient crop of acorns. According to some (Driver 1952), acorns were not eaten much in this area in historic times, except when the maize crop failed or was destroyed by enemies. However, during pre-agricultural times, the acorn was probably second to wild rice as a vegetable staple. Nevertheless, the acorn did not attain the important place in the diet here as it did in California.

Accounts in the **Jesuit Relations** indicate that famine usually was the motivating force for the Indian to seek the acorn. It is interesting to note that much of the information concerns the Hurons who lived outside of what is generally considered the oak belt.[1] This might indicate a larger belt of oak than expected or if actual gathering of the nuts was not accomplished in this region, perhaps trade might be the answer. Following are some quotations from the **Relations** noting the use of the acorn during famine times. Of the Hurons it was recorded:

"in the last year of famine, acorns and bitter roots were, to him, delicious." (Ragueneau 1650; Thwaites 1896-1901).[2]

"famine prevalent . . . being constrained either to eat acorns, or else to go and seek in the woods some wild roots. With these they sustain a wretched life." (Ragueneau 1650-T).

"They scatter hither and thither in quest of acorns having neither hunting, nor fishing, nor grain." (Ragueneau 1650-T).

Then, too, we find that the Iroquois, usually considered a successful agricultural tribe, ate the bitter nuts. Perhaps then, the acorn was not as strange a food as so often believed for these eastern Indians. It was noted:

"Acorn . . . being a present of no small account among these people, who have no more delicious dish during the winter, when they are unsuccessful in hunting and fishing." (Dablon 1673-T).

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1 Distribution maps indicate that only one oak extends above the Great Lakes region. This is the red oak. How important it might have been for the acorn can not be determined. The other oaks are confined to the more southern areas. (1949 Yearbook of Agriculture).

2 Rather than indicate Thwaites as the editor of the translations each time the letter "T" will be put after the date of the Jesuit father who is quoted.

Most of the Fathers viewed the acorn with contempt calling them "the food of swine . . . eaten with relish, and hunger alone provided the sauce." (Ragueneau 1649-T).

Acorns are very bitter and need to be prepared to remove the tannic acid. This meant the acid was chemically neutralized with a base or usually leached (Driver 1952). In California the Indian would remove the shell, dry the meat in the sun, pulverize the nut and then remove the acid by pouring water over the flour which had been placed in a sandy hole. Naturally, this meant that the flour was somewhat gritty when used (Gifford 1936). On the other hand, the acorns were leached whole in boiling water in the Great Lakes region. Accounts indicate that some of the acorns were very bitter and had to be cooked for 12 hours. The first boiling was in water that contained a large amount of ashes (Dablon 1672-T). Sometimes the nuts after being dried were merely roasted in a kettle with ashes to take away the bitterness (Rasles 1723-T).

After the acorns were leached they were cooked (Driver 1952). Most often they were added to other foods—especially such meat as bear meat (Rasles 1723-T). There is no mention that acorns were used as a flour; but it is possible that they were utilized in this manner. As noted above they often served as the only food in famine times.

Logically, we should continue with a discussion of the other so-called famine foods. Roots were recorded as used with the acorn in times of hunger (Bressani 1653-T). Among them was **Chiquebu**, a root which tasted like truffles, and grew under the ground strung to one another. Because of this habit, they were often called rosary or ground nuts by the Jesuits (Biard 1616-T). These were probably the roots of the plant **Apios Tuberosa** . Other roots eaten in time of need included **Helianthus tuberosa**, **Arachis hypogae, Nelumbium luteim**, or **Cyamus luteus** and also a red-lily variety — probably **Lilium canadense** (Le Jeuene 1633 and Lescarbot 1612-T). These roots, often described as "paltry" (Lalemont 1644-T), were served by cooking alone in water without salt and without bread or other relish (Bressani 1653-T).

Those who did not have the acorn or roots in the time of famine contented themselves with other foods. "Those who

have none, live partly on garlic baked under the ashes, or cooked in water without sauce'' (Ragueneau 1649).

Another food was a lichen [3] growing on the rocks. It was called, ''roche de tripe'' or moss by most of the writers. From the lichen a ''very black and disagreeable porridge'' was made (Rasles 1723-T). Dablon (1623-T) said ''to make the broth . . . it is only necessary to boil it; and then . . . occasionally stir. . . . it to make it resemble a black glue. One must close his eyes on first tasting it, and take care lest his lips stick together.'' Lalemont (1663-T) observed that the thickened water was'' . . . a kind of foam or slime, like that of snails and feeding their imaginations more than their bodies.'' In addition the lichen was roasted (Rasles 1723-T). Sometimes a punk was made, when the lichen was first rotted in water. After this treatment it became absorbent and expanded like a sponge (Ragueneau 1651-T).

Another famine food was the bark of trees. This was first boiled to make it edible (Ragueneau 1651-T). The bark of oak, linden or other white wood, and that of other trees ''when well cooked and pounded, and then put into the water in which fish has been boiled, or else mixed with fish-oil, made them excellent stews'' (Lalemont 1663-T). Rasles (1723-T) claimed that when the wood was cooked, it was tender as half cooked radishes. In addition to bark, leaves, as that of the aspen were also eaten (Le Jeuene 1661-T).

There is not much record of the Indians using the fruits that grew in the forest. A remark by Marest (1712-T) in talking of the Illinois claimed ''our savages are not accustomed to gather fruit from the trees; they think it better to cut down the trees themselves; for this reason, there are scarcely any fruit trees in the vicinity of the village.''

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3 **Umbilicaria Dillenii,** one of the edible species of lichens growing upon the rocks in Canada. A newspaper account says that this food even today is a useful emergency ration for persons lost in the woods. The findings were released by Mildred E. Radford, a researcher at the University of New Hampshire. Her findings show that lichens provide a third more calories per unit of weight than some staple foods, including honey, hominy, corn flakes, cabbage, sugar and soybeans . . . none of the common varieties found in the United States is poisonous. (Milwaukee Journal 1954)

The use of trees in this area is well summarized by Le Jeuene (1633-T) as follows:

They eat, besides some small ground fruits, such as raspberries, blueberries,[4] strawberries, nuts, which have very bitter meat, hazelnuts, wild apples sweeter than those of France, but much smaller, and cherries. . . . They have also other small wild fruits." In addition to the above information we find that the plum (Le Jeuene 1635-T), papaw (Bonnecamp 1749-T), cranberries (Le Jeuene 1657-T), persimmon (Chauchetiere 1649-T), beechnuts[5] (Allouez 1670-T), chestnuts[6] (Le Jeuene 1657-T) and doubtless many other fruits were collected.

The list of foods could continue for some time. It would include further the mushroom (Bressani 1653-T) and the sugar maple—both the bark and the sap for sugar (Le Jeuene 1634-T and Rasles 1723-T).

So far our discussion has been limited to the famine-food staple, the acorn, and a review of the other food uses. Now, we should like to review the literature on the two staples of the region.

The first staple to be considered is wild rice (Jenks 1902). **Zizania aquatica** is an annual. The grain is shed into the water when it ripens in the the autumn, and lies in the soft ooze of alluvial mud at the bottom of the lake or river until spring, when it germinates and grows rapidly to the surface. The range of the plant was from latitude 50° to the Gulf of Mexico and from the Atlantic to the Rockies, growing only in water not having a sand or clay bed and only in slow-flowing streams or marsh-like areas.[7] This crop was a staple for those tribes in that part of Minnesota east of the Mississippi and in

4 dried and pounded with meat. (Le Jeuene 1639-T).

5 pounded into flour by the Potawatomi.

6 Boiled and when the oil rose to the top it was skimmed off, stored and used to flavor sagamite or other foods.

7 The range of the plant is now given as "marshes and borders of streams and ponds, usually shallow water, Maine to Michigan and Illinois, south to Florida and Louisiana; Idaho." (Hitchcock 1950)

all of Wisconsin with the exception of the southwestern portion of the state. This has been called the Wild-Rice Region by Kroeber (1947). According to some, a sort of semi-agriculture was practiced by some of the tribes in the region as they would cultivate this grass (Palmer 1934). However, this practice seemed to depend upon religious beliefs. It was found by Jenks (1902) that the Menomini Indians did not sow the rice because of certain religious restrictions. Although the Dakota had no taboo against rice cultivation, they did not plant the grain. The Objibwa and Assinboin did sow rice.

The method of harvesting the wild crop is well summarized as follows (Sanford 1916):

"Before the grain was ripe, the women went through it with their canoes, twisting and tying the growing stalks into bunches. This prevented the wind from blowing the ripened kernels into the water and made it more difficult for the birds to get at them.

To harvest the grain two women went out in a canoe, one sitting in each end. One had a forked stick which she thrust down into the mud, and this guided and steadied the canoe. The other carried two sticks; one had a crook at the end, with which she bent the bundles of rice over the canoe; with the other she beat out the kernels until her end of the canoe was comfortably filled. The women then exchanged sticks and tasks, and so the other end of the boat would be filled. To hull the rice,[8] a few quarts were poured into a skin bag; this was placed in a shallow hole in the ground and trodden upon. It was winnowed by being tossed up in the air when a breeze was blowing; or, a birchbark fan was used to blow the husks away. The rice was dried or parched by sun or fire, and was thus kept for winter use."

We also find that there was another economic staple established for the area. This food was maize or Indian corn and was produced by agriculture. Many of the eastern tribes practiced agriculture. Carr (1882) indicates that there cannot

8 This is the basic account given by the Jesuit Fathers except that it was reported for the Menomini that the rice was first dried in the smoke of the fires before being put into the skin bags for treading. (Marquette 1674-T).

be any doubt that corn was cultivated in the eastern United States from the St. Lawrence south and as far west as the Mississippi and at times even further if the weather conditions and water supply permitted the practice. (Wedel 1941)

Kroeber (1947) and Will (1917) both estimate that about 50% of the food in the eastern United States was obtained from supplies at hand and that the other 50% food supply might have come from agriculture. This figure would of course vary depending upon the region that is discussed, but we can probably say that if agriculture were practiced it contributed greatly to the economy of the people. Kroeber (1947) indicated that agriculture was not basic to life in the East; but was an auxiliary luxury. He called the eastern Indians "agricultural hunters." He pointed out that the "Eastern Indian cultivated less than one percent of the area on which theoretically he could successfully have grown crops satisfactorily to his needs and standards. My own opinion is that the figure was under rather than over ½ of a percent."

However, we find these eastern Indians carried agriculture as far north as could be practiced—to the 100 frost free days line and sometimes even outside this line (Hibbard 1904). This means the northern 120 day limit would include eastern Wisconsin, the parts of Ontario and New York occupied by the Hurons and Iroquois, Hudson Valley and other spots. The line of the 100 frost free days would extend the area even further west and north. It is interesting to note that this extension line seems to follow the water-ways and river valleys.

The age of agriculture in the East is based on speculation to some degree. If we use Sears' (1932) analysis of the ancient forest we can see where agriculture or maize cultivation was possible some 8,000 years ago and probably reached an optimum about 3,000 years before the present day. Agriculture moved into the northeast at about the same time so we can probably say it was present in this region at least 2,500 to 3,000 years ago. Carter (1945) places the possibility of agriculture based on archeological findings at 2,000 B. C. Evidence, then, seems to be convincing for this early date.

Kroeber (1947) insists that maize was an integral part of

the economy of these people at the time of the mound building Indians and then subsequently played a less important role as they devoted more time to warfare. At least we can say that agriculture was an important part of the economy at some time, since remains called garden beds indicate cultivation for a fairly long period of time (Brown, C. E. 1909). This raising of corn in hills was not restricted to a small area; but seems to have been widespread as sixteen or more sites have been described for the state of Wisconsin. The age of these beds is not determined; but at least some say the hills are prehistoric. Sometimes these remains do not occur in hills; but rather in ridges as illustrated by the ones on Picnic Point in Madison, Wisconsin. Imagination plays a part; but most of these humps and lines appear fairly authentic. The average width of the hills is four feet and the depth is about six inches (Wilson 1876). The average distance between the Huron hills was two feet (Delabbare 1920). These seem to indicate that the method of planting corn was usually in hills; but sometimes in rows. There is no evidence why one method might have been preferred over the other.

Other reports point out that agriculture was still important to these northeastern Indians in the historic period. When Black Hawk was in command of the Sauk and Fox, he claimed that his people had under cultivation about 800 acres (Hibbard 1904). A Jesuit (Ragueneau 1658-T) related that 2,000 Algonquins were seen by him tilling the soil. At any rate Indian corn among the Hurons was called "the sole staff of life" (Lalemont 1643-T).

Records indicate that agriculture was not practiced north of the Hurons (Bressani 1653) and was introduced with little success since the tribes were more interested in fishing and hunting (Lescarbot 1612-T). There is some indication that maize was raised in Quebec before the Jesuits came; but usually acorns were needed for famine as often the crop failed above the frost line as discussed earlier in this paper. There are accounts that agriculture was practiced by most tribes in

the Wisconsin region[9] and intensively by the Huron, who obtained sufficient support from the crop for the year (Le Jeuene 1636-T).

Most of the work among the Hurons was done by the women as was typical for many of the tribes (Bressani 1653-T). For the Illinois, it was noted that "as for the women, they work from morning to evening like slaves. It is they who cultivate the land and plant the corn in the summer." (Rasles 1616-T). The men spent their time hunting and fishing (Bressani 1653-T). Sometimes fields were communal as among the southern Natchez (Le Petit 1720-T) and one vast field was planted; but, in general, for the northern tribes the plots were small—probably being shared by families (Le Jeuene 1641-T). Fertilizing the soil was not practiced in most of the area as this was a procedure only among the New England Indians (Byers 1946) and the Iroquois in New York (Carrier 1923).

There are many accounts where tribes just moved when the land was exhausted since this resource was not a restrictive element here in such a vast area. Of the Hurons it was said "the soil as they do not cultivate it, produces for only ten or twelve years at most, and when the ten years have expired, they are obliged to remove their village to another place (Du Peron 1639-T). The Iroquois, who had gotten as far north as Montreal, "had to settle elsewhere as their soil was exhausted and the woods were too far away" (Decrees of Council 1716-T). The planting of two crops a year as a practice in some of the more southern regions must have had its affect on the land also (Allouez 1667-T).

As indicated earlier, the crops were not always successful as the weather, enemies and worms took their toll (Allouez 1667-T); but usually we find that "It is true they have an abundance of Indian corn, which they sow at all seasons—

9 One account by Allouez (1667-T) says "The Potawatomi . . . land is excellently adapted to raising corn, and they have fields covered with it to which they are glad to have recourse, to avoid the famine that is only too common in these regions." Marquette (1647-T) also noted that "among the Mascoutens, Miamis and Kickapous that the soil is very fertile and yields much Indian corn."

usually three times a year. They are fond of green corn." (Marquette 1674-T).

The Hurons raised, in addition to corn, beans, squash, pumpkins and tobacco (Du Peron 1639-T).

The corn was stored for the winter in bark containers (Marquette 1674-T) or in caches (Parkman 1910). Squash was dried to eat in the winter. Pumpkins were baked under the ashes (Bressani 1653-T). These northern tribes cooked beans in clear water without seasoning (de Quens 1656-T) or made them into bread (Mercier 1653-T). Corn underwent various treatments. The Hurons roasted the ears in the embers (Lalemont 1642-T); cooked it in water, as were the beans (de Quens 1656-T), or mostly ground it very finely between stones (Rasles 1723-T). After grinding, the flour was made into a bread (Mercier 1653-T, and this sagamite was sometimes seasoned with fat or dried fish (Rasles 1723-T).

In summarizing this paper. we found that the Jesuits reported that many varied forms of vegetation were used for food. We can assume that most of these were local adaptions to the environment. Probably the only introduced aspect was agriculture, from perhaps some southern influence. It is to be noted that most of the material presented is concerned with most of the early Indian settlers of Wisconsin and this could further indicate that the food utilization was of local origin with little influence from migrating tribes or of "white-man" civilized practices.

There are several problems which arise that need further clarifications. For one, just how important a food was the acorn? From reports, it seems to be restricted to famine times: but just how "famine" this food was is hard to determine. As discussed, even fairly successful agricultural tribes needed to rely upon the acorn at times. Another interesting fact is that the acorn was used out of what is usually considered the oak belt. There is one oak that does grow around the Great Lakes; but whether or not this was the only source of the nut is not known. Perhaps trade relations might have solved this problem to some extent.

Furthermore, in discussing agriculture, evidence by the Jesuits points out a large amount of dependence upon corn

and allied cultivated crops. This would not support Kroeber's thoughts that agriculture was only a luxury in these areas. Furthermore, the northern extension goes far into Canada.

This paper has discussed the vegetation probably evident at the time of Jesuit activity and points out the Indian uses of the botanical environment. Naturally, we must note that these people were also hunters and we do not intend to give the impression that vegetation is the only factor to be considered. The discussion has pointed out the uses of the vegetation and how the Jesuit material is a good source of utilization before non-Indian influences were introduced to any great extent.

BIBLIOGRAPHY

1. Anonymous, January 18, 1954, Lichens Might Save Your Life in the Milwaukee Journal, Milwaukee, Wisconsin.
2. Anonymous, 1924, Uses of Native Plants by the Menomini in the Wisconsin Archeologist vol. 3, n. s., no. 1. pp. 24-26.
3. Brown, Charles E., 1909, Wisconsin Garden Beds in the Wisconsin Archeologist vol. 8 o. s. pp. 97-105.
4. Brown, F. Martin, 1937, America's Yesterday. J. P. Lippincott Co., Philadelphia. pp. 245-268.
5. Byers, Douglas S., 1946, The Environment of the Northeast in Man in North East North America by Frederick Johnson. Phillips Academy, Andover, Mass. pp. 3-32.
6. Carr, Lucien, 1882, The Mounds of the Mississippi Valley. Johnson and Barrett, Yeoman Press, Frankfort, Kentucky. pp. 7-35.
7. Carrier, Lyman, 1923, The Beginnings of Agriculture in America. McGraw Hill Book, Co. New York. pp. 20-101.
8. Carter, George F., 1945, Plant Geography and Culture History in America Southwest. Viking Fund, Inc., New York.
9. Curtis, J. T., 1950, Plant Ecology Work Book. Burgess Publishing Co., Minneapolis, Minnesota.
10. Delabarre, E. B., and H. H. Wilder, 1920, Indian Corn Hills in Mass. in American Anthropologist vol. 22 n. s. pp. 203-25.
11. Driver, Harold E., 1952, The Acorn in the North American Indian Diet in Indiana Academy of Science vol. 62. pp. 56-62.
12. Gifford, E. W., 1936, California Balanophagy in Essays in Anthropology in Honor of Alfred Louis Kroeber. University of California Press, Berkeley, California. pp. 87-98.
13. Hedrick, Ulysses Prentice, 1933, A History of Agriculture in

the State of New York. J. B. Lyon Co., Albany, New York. pp. 20-39.

14. Hibbard, B. H., 1904, Indian Agriculture in Southern Wisconsin in Proceedings of the Wisconsin Historical Society, 52nd Annual Meeting. pp. 145-55.
15. Hitchcock, A. S., 1950, Manual of the Grasses of the United States, U. S. Department of Agriculture, Washington, D. C.
16. Jenks, Albert Ernest, 1902, The Wild-Rice Gatherers of the Upper Lakes in the 19th Annual Report of American Ethnology, part 2. Government Printing Office, Washington, D. C. pp. 1013-1137.
17. Kroeber, A. L., 1947, Cultural and Natural Areas of Native North America. University of California Press, Berkeley, California. pp. 89-99, 148, 211-212 and 218-221.
18. Oosting, Henry J., 1948, The Study of Plant Communities, W. H. Freeman and Co., San Francisco, California. pp. 240-244, 245-259.
19. Palmer, Rose, 1934, The North American Indians in Smithsonia Scientific Series, vol. 4. Smithsonian Institution Series, Inc., New York. p. 66.
20. Parkman, Francis, 1910, The Jesuits in North America in the 17th Century, vol. 3, part 1. Little, Brown and Co., Boston. pp. 3-87.
21. Peabody, W. B. O., 1877, The Early Jesuit Missionaries of the North Western Territory in the Indian Miscellany by W. W. Beach. J. Munsell, Albany. pp. 102-119.
22. Sanford, Albert H., 1916, The Story of Agriculture in the United States. D. C. Heath and Co., Chicago. pp. 1-11.
23. Sears, P. B., 1932, Archeology of Environment in Eastern North America in American Anthropologist 34. pp. 610-622.
24. Schoewe, Charles G., July 1932, Uses of Wood and Bark Among Wisconsin Indians in Wisconsin Archeologist vol 11, no. 4. pp. 148-152.
25. Stefferud, Alfred, editor, 1949, Trees, Yearbook of Agriculture. U. S. Department of Agriculture, Washington, D. C.
26. Swanton, John R., 1952, The Indian Tribes of North America, Smithsonian Institution Bureau of American Ethnology: Bulletin 145. United States Government Printing Office, Washington, D. C. pp. 250-259.
27. Thwaites, Rueben Gold, 1902, Collections of the State Historical Society of Wisconsin, vol. 16. Democrat Printing Co., Madison, Wisconsin.
28. ————, 1896-1901, Travels and Explorations of the Jesuit Missionaries in New France 1610-1791 vol. 1-72. The Burrows Brothers Company, Publishers, Cleveland, Ohio.
29. Weaver, John E. and F. E. Clements, 1938, Plant Ecology.

McGraw-Hill Book Company, Inc., New York. pp. 487-491, 496-499, 508-515.

30. Wedel, Waldo R., 1941, Environment and Native Subsistence Economics in the Central Great Plains in Smithsonian Miscellaneous Collections, vol. 101, no. 3. Lord Baltimore Press, Baltimore, Maryland.

31. Will, George F. and George E. Hyde, 1917, Corn Among the Indians of the Upper Missouri. The Torch Press, Cedar Rapids, Iowa.

32. Wilson, Daniel, 1876, Prehistoric Man, vol. 1. Macmillan and Co., London. pp. 203-223.

SYMPOSIUM ON THE SOUTHWEST

A study of the problems of biological affinities of extant and extinct Southwest Indian populations in statistical-anthropometric terms has been included in a special August issue of the American Anthropologist, journal of The American Anthropological Association.

The paper, "Some Problems in the Physical Anthropology of the American Southwest," by Dr. J. N. Spuhler of the University of Michigan, also applies a statistical method to the problem of phylogeny of the Mogollon and Chama peoples. Physicians interested in human genetics and archeology should find it worthwhile reading, Dr. Sol Tax, journal editor, announced.

Ten other papers by leading anthropologists on ethnology, archeology, linguistics, culture and personality, intercultural relations, and every phase of anthropology bearing on the American Southwest are included in symposium form, Tax said. Critical comments by panels of specialists follow each article, an unusual device for presenting different viewpoints and more information on the subjects covered.

An example of this controversial approach is Bertram Kraus's criticism of the Spuhler paper. Warning of the "sacred cow" approach to statistics, the University of Arizona anthropologist termed Spuhler's data "neither reliable nor valid." He did not blame the author. But, Kraus predicted, "The great bulk of the skeletal material collected in the Southwest over the past fifty or sixty years will continue to

defy every effort to study population structure and relationships."

The special issue of American Anthropologist, first in its 66-year history to be devoted to a single area, "will be a standard reference, popular and useful for years to come," according to Dr. Tax. Copies of the journal at $2.25 may be obtained from the Executive Secretary, Box 71, Andover, Mass. Membership in the Association at $8.50 a year entitles the holder to six issues of the American Anthropologist, four numbers of the Association's Bulletin, and, this year, four Memoirs (books).

Maps, charts, illustrations and extensive bibliography are included in the scholarly appraisal, guest edited by Emil W. Haury of the University of Arizona.

THE BEDORA MOUND GROUP OF OCONTO COUNTY

by Ellis Burcaw

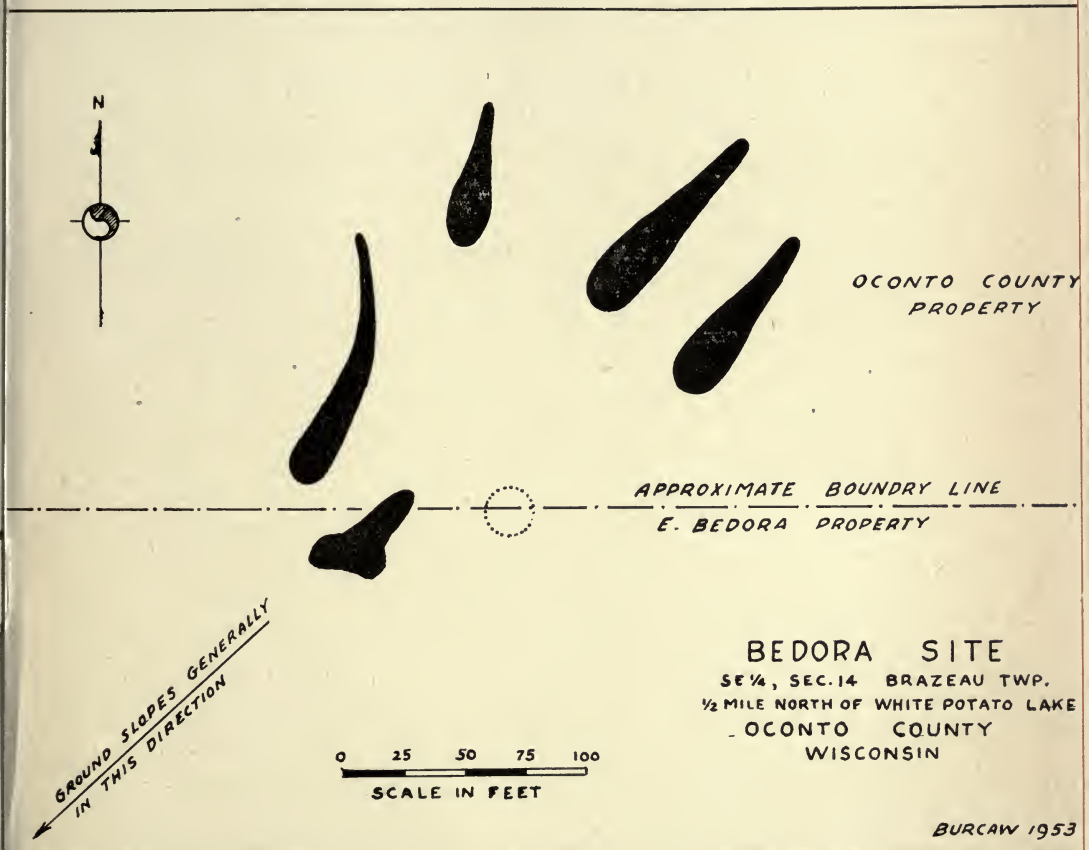
One of the activities of the Green Bay chapter of the Wisconsin Archeological Society this past summer (1953) was the examination of this group of effigy mounds north of White Potato Lake in Oconto County. This site was previously reported on by J. P. Schumacher and J. H. Glaser in the Wisconsin Archeologist Vol. 11, No. 4, April, 1913. The authors mention the difficulty of mapping due to the undergrowth. Forty-one or more years later we had the same problem. We had to do a considerable amount of clearing, even to cutting down small trees. Using the plane table and alidade method the accompanying map was obtained. Work began at the southern portion of the site and proceeded in a clockwise direction, error of closure at the end being less than a foot.

The site is easily reached being about 100 yards south of the road which runs around the north end of the lake, near an intersection.

We excavated the circular mound and the remains of a looted burial at the center, the looting having taken place about 25 years ago, according to reports. The western edge of the mound is indicated on the map by dashes rather than a solid line because it had been disturbed by recent digging

before we arrived on the scene to begin the map. All the mounds appear to have been disturbed. Test pits and trenches sunk by us revealed nothing.

The mounds are 3 to 4 feet high at their heads, sloping to about a foot or to nothing at the extremities. The circular mound was 3½ feet high at the center. The site itself sloped in the direction in which the mounds were oriented, that is, from northeast to southwest.



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December, 1954 Vol. 35, No. 4

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Milwaukee, Wisconsin

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DODGE COUNTY EFFIGY MOUNDS

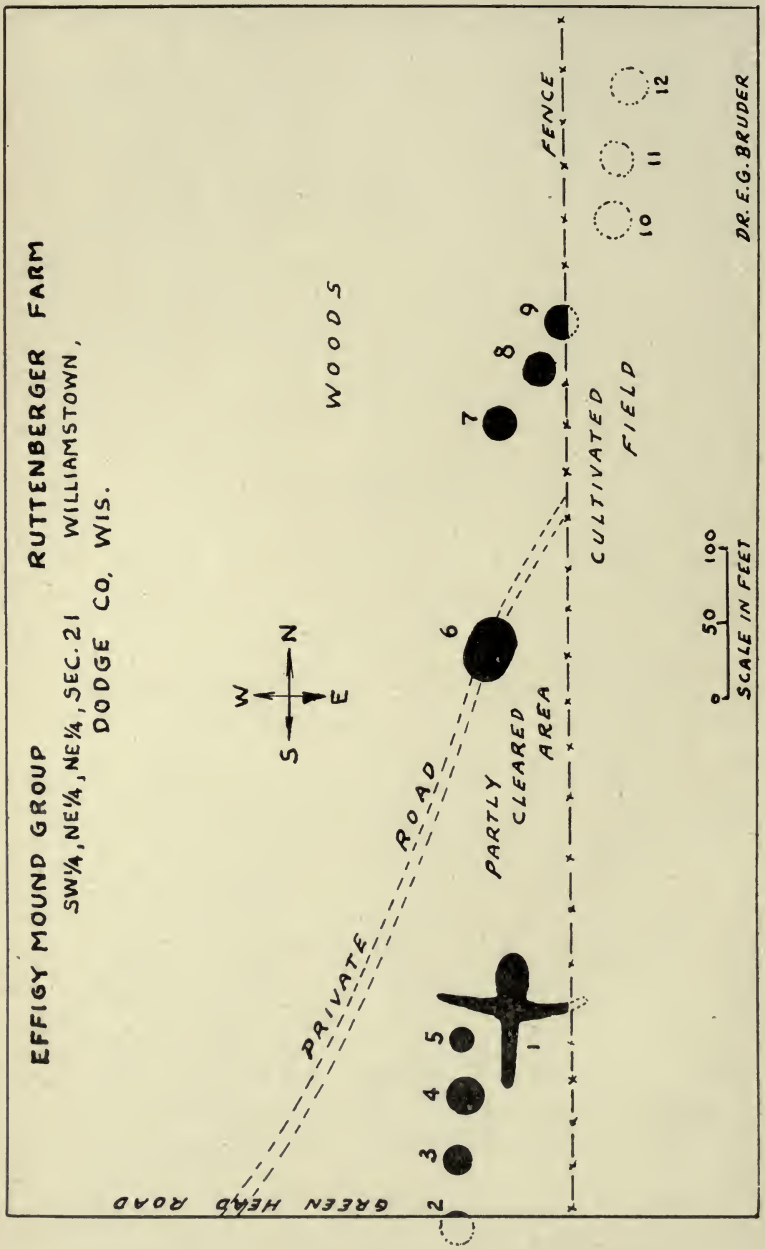
The Ruttenberger Group

by Dr. E. G. Bruder

This group of seven mounds is located on the William Ruttenberger farm in the township of Williamstown, Dodge County. Several trails pass through this area leading to the main channel of the east branch of the Rock River where it enters the Horicon Marsh.

Mound Descriptions

The group consists of one goose mound and 6 conicals. The goose mound is 79 feet long, and bears S 8°W. Its right wing is 46 feet long, and 11 inches high, with the left wing measuring 41 feet long, 5 feet having been removed by the plough. Its neck is 10 inches high, and its body 18 inches high, both clearly defined. Like all of the earthworks of this group, each mound evidences the outstanding characteristic—that of very low height. This fact is noticeable in the earthworks, extending for several miles, both north and south of this group along the very edge of the Horicon Marsh. Mound No. 2 was originally a conical about 18 feet in diameter, 17 inches high, and was almost entirely destroyed in the widening of the "Green Head Road" to the south. The mounds to the south of the road were destroyed by the now obliterated village of Neu Schleswig. No detailed description was ever made of them. Conical Mound No. 3, 16 feet in diameter, and 17 inches high is located 30 feet north of the south fence. Sixteen feet north of No. 3 is Conical No. 4, 29 feet in diameter, and 17 inches high. Thirteen feet to the north of No. 4 is conical No. 5, 26 feet in diameter and 12 inches high, perfectly made, but very low. All above described conical mounds extend in a line 126 feet from the south fence to the center of right wing of the goose. One hundred and ninety-one feet north from this right wing we find conical No. 6. It is an oval shaped mound 56 feet long,


EFFIGY MOUND GROUP
RUTTENBERGER FARM
SW¼, NE¼, NE¼, SEC. 21 WILLIAMSTOWN,
DODGE CO. WIS.
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WOODS
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PARTLY CLEARED AREA
CULTIVATED FIELD
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SCALE IN FEET
DR. E. G. BRUDER

and 28 feet wide with a rather flat top 30 inches high. This type of mound, oval with a flat top giving it a truncated appearance, has been located in three other groups of prehistoric works in this area, but only one of this description in each group.

Conicals Nos. 7 and 8, are 25 feet, and 21 feet in diameter respectively, and both are 16 inches high.

Mound No. 9 is a conical, which was formerly 22 feet in diameter, 4 feet having been removed by cultivation of the adjoining field. Numbers 10, 11, and 12 were conicals of approximately the same size as Nos. 7, 8, and 9, but in late years have vanished completely. Their very low average height of 16 inches hastened the process of elimination. An area about 200 feet long and 100 feet wide still remains as a patch of white from disintegrated bone in the sandy ridge at the northwest corner of the farm. It was evidently a refuse pile of ages ago. Many pieces of worked flint and pieces of pottery have been found there. Several large village sites were located immediately adjoining this field.

FOLSOMOID POINTS IN RICHLAND COUNTY

By Earl Sugden

Much archeological interest has been aroused by the discovery of a distinct type arrow-head, associated with the bones of an extinct form of bison, near Folsom, New Mexico. It has the general form of a square-sterned row-boat. The base is concave with a blunt point on each side. There is a long shallow groove on each side, extending to near the tip.

The typical Folsom point is rather rare, but many so-called generalized Folsom or Folsomoid points have been found in scattered localities in the Eastern United States. These are often longer and narrower than the typical form, with only one groove. Forty such points have been found in north central Richland county. Four are quartzite and the rest of chert. Only one is a classic Folsom type (Figure 1, center). It is made of translucent nearly white quartzite. It has a single master stroke on both sides, extending to near the tip. It is very neatly chipped and indicates that its maker

had almost perfect technical skill. Some of those made of chert are encrusted with iron oxide.

All these were found within a radius of one mile. Nearly all were on terraces having a slope downwards on all sides, so that no alluvium could be washed upon them. There are two series of such terraces in this locality, one of Glacial age near the flood-plains of the streams and the other about one hundred feet higher. This is a rock-terrace much older than the other. All these points were buried in the subsoil which is seldom more than four inches beneath the surface. None were found in the black top-soil. These could have lain for long ages without being buried deeper. All these facts indicated that they all reach back to a very remote antiquity.

Less than twenty-five percent of these ancient artifacts are made from local material, all the rest must have been transported from some distance, either before or after manufacture. All the quartzite and much of the chert do not occur in this region. Only material with conchoidal fracture can be chipped into these spear-points. The nearest source of the quartzite are that of Mosinee and Rib Hill, as the extensive Baraboo quartzite is not suitable.

It is well nigh impossible to determine the relative ages of

the various types of these Folsomoid points, as well as all the other artifacts found associated with them. Some of these are very crudely-made, and may be either primitive or degenerated.

In this locality are hundreds of over-hanging cliffs that have served as shelters for primitive man. Buried beneath these are broken bones, shards of pottery, clam-shells and other "kitchen middens", but I have found no article made of chert or quartzite. Few of these have been explored. On the other hand not a fragment of bone, wood, pottery or even charcoal can be found associated with these spear-points.

A COMMENT ON THE CARBON-14 DATES FOR OLD COPPER

The most exciting news to reach the ears of those interested in Wisconsin archeology has been the recent release of the carbon-14 dates for the Old Copper Culture. From an analysis of charcoal samples excavated at the Oconto site [1] in 1952 W. F. Libby of the Institute of Nuclear Physics, University of Chicago, has obtained dates which established Old Copper as the earliest known manifestation of man in northeastern North America.

Two samples were run, the first producing a date of 5600 years ago (plus or minus 400 years—the range of calculated error), and the second yielding a date of 7510 years ago (plus of minus 340 years). The spread of nearly 2000 years between the two dates is difficult to explain, but if the answer lies in the factor of natural contamination due to rootlets in the soil, the older date would be the more reliable. In either case the relative position of the Old Copper Culture is definitely established in the cultural sequence of Wisconsin.

The discovery of these dates should cause our collectors of archeological material, many of whom have Old Copper specimens in their collections, to view these artifacts with a new respect and understanding.

—The Editor

[1] For site report see the Wisconsin Archeologist, New Series, Vol. 33, No. 4, 1952.

CHARLES E. BROWN CHAPTER REPORT

During its second year membership in the Madison chapter of the Wisconsin Archeological Society increased by 15, making a total of 41. The chapter officers this year were Arthur W. Quan, president; Mrs. Charles E. Brown, secretary; and Warren L. Wittry, treasurer. David A. Baerreis and Warren L. Wittry served as program co-chairmen.

Meetings continued to be held on the second Monday of the month in order not to conflict with those of the state society in Milwaukee. The following programs were enjoyed by an average attendance of 28 members and guests:

October: Dr. Hiroshi Daifuku, "The Reigh Site."

November: Thee veteran collectors told how they got started in their hobbies. They were T. F. Kouba, A. W. Quan, and F. A. Achen. Robert Hall also spoke on the archeological record resources of the State Historical Society and the work of Charles E. Brown in collecting them.

December: G. Ellis Burcaw lectured on his archeological experiences in Arabia and France.

January: Dr. Jonathan Sauer, "Indian Crop Plants."

February: Dr. William Godfrey, "The Vikings in America."

March: "The Presence of Our Past," a film produced by the State Historical Society was shown. It was introduced by John W. Jenkins.

April: Dr. Lindley Sprague, "Indian Medicine and Cures."

May: The chapter was host for the annual dinner and convention of the state society (see **Wis. Arch.**, n. s., 35:56-7).

—Warren L. Wittry, treasurer

REMINISCENCES OF A CHIPPEWA MIDE PRIEST

Recorded by Victor Barnouw

(The biographical material that follows was taken down at Lac du Flambeau Reservation in northern Wisconsin in the summer of 1944. My informant was an elderly Medicine Dance (Mide) priest, whose name I have given as Tom Badger. Some material about this man and his wife has appeared in previous publications of mine.[1] Tom Badger was a quiet level-headed old-timer, with a good sense of humor. He spoke a little English, but not quite enough for good communication, so most of the time we had an interpreter. The first two interpreters were elderly women about Tom's age, who worked for one or two sessions; the rest of the time Tom's wife Julia served as our interpreter.

Julia was 34 years of age, less than half as old as Tom. Tom had been married twice before and had children of Julia's age by his first wife. The first wife was dead, but Tom's second wife was still living in Lac du Flambeau. It is understandable that Tom did not want to speak about his marriages, with Julia as the interpreter. Partly for that reason, this document is not a full-fledged autobiography; important areas of life have been left out of the narrative. However, it does give a picture of living conditions in Wisconsin at around the turn of the century, when some Indian groups were still relatively untouched by the inroads of western culture, and it reflects the beliefs and attitudes of a conservative Chippewa Mide priest.)

The first thing I can remember I was with my mother, who was picking strawberries A bumble-bee bit me in the eye. That's why that eye is smaller than the other. This happened before I was born.

Before I was born I was walking towards the sun—not on the earth. I saw something over there that was shining. (The reason I'm telling you these things is that you gave me tobacco before we began.) I was coming from the west. I looked

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1 "Acculturation and Personality among the Wisconsin Chippewa", Memoir Number 72 of the American Anthropological Association, October, 1950; "The Phantasy World of a Chippewa Woman", **Psychiatry**, Vol. 12, No. 1, February, 1949, pp. 67-76; "A Psychological Interpretation of a Chippewa Origin Legend", **Journal of American Folklore** (forthcoming).

to the north and saw this shining thing. I didn't know what it was.

After I passed the south end of the place where I was walking, half-way to the east, I saw that shining thing. I didn't know what it was, but it was pretty. I turned to look at it and saw that man standing there behind me. He was like a little fellow, like a boy—short. He kept right along behind me, wherever I went. When we went to that shining thing, he was right there.

I walked to that shining thing. When I got near to it, it was a stream or a river. I walked slowly toward the river. The stream looked just like a mirror; it was frozen over. There was no snow on it. When I was right next to that river, the man behind me spoke to me. We had reached a bend in the river, and this man said, "Let's slide across to the bend there."

We slid along the ice. When I reached the bend, I was born. I don't know what the other fellow looked like or what became of him then. His name was Bebukowe. (Mrs. Badger said, "I've seen him too.") [2]

There were seven in our family: three boys, four girls. I was the youngest. They were all a year or two apart; but I don't know exactly how many years. While we were at Sugar Camp Lake my father's mother and one of my sisters died. Then we left that place and moved about a thousand feet away, because of those two deaths.

We used to travel a lot because my father had to keep on the move, looking for game. We used to travel from place to place by birch-bark canoe. We had two canoes. Not everybody could get in, so some would walk along the shore. My brothers were old enough to carry the canoe on the portages.

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2 See her account in "The Phantasy World of a Chippewa Woman", pp. 10-3.
Tom Badger never had a guardian spirit dream in childhood, but this "recollection" serves as the equivalent in giving him a tie with the supernatural world. Because of this experience Tom is able to give children names in the old Indian tradition—naming them after Bebukowe. Normally, only people who have had a fasting dream can give names to children. **We?e** is a term for the "god-father" who gives such a name, or for the child who receives it.

My mother and father carried the other canoe. I was just old enough to walk. I couldn't help carry.

One time, when I was three or four years old, I wanted to nurse. My mother was cutting wood. It was in the winter time. So I went into the woods and told her there were some guests down at our log house. There really were no guests at all. But that's how I got her to nurse me. She left her work and came back to the house.

When the berries were ripe, we went to pick blueberries. We went with this old fellow who was half blind. We dried the blueberries, made a smoke rack about four feet high, and spread birch-bark over it and dried our berries on it. There was a slow fire under it. One time when we were picking berries, we left this old fellow behind, as we were going through the brush. When he came along after us, he heard a noise, and he thought they were little kids making a noise and trying to fool with him. But they were little bear cubs climbing a tree. He heard the scratching, so he knew they were bears. When the old fellow reached home, he told us about those bears. I was scared. I was afraid of that place after that.

We picked berries every day. One time, when we got to that place, my mother and father found that they'd left something behind. They asked me to go and get it. So I had to go past that place alone—where the old man had heard the bear cubs. When I was gone, my brother ran to that place to scare me. He hid in the brush, and when I came by, he ran out, making a loud noise. I was running fast, to get by there in a hurry; and when my brother made that noise I was very frightened. I just grabbed him tightly and cried. I've never forgotten that.

Then we stopped picking berries and made a deer fence. I helped by clearing the leaves away, so that my father wouldn't make a noise on the leaves when he walked along. We made the fence by felling trees, lining them in a row. After the fence was laid, we cleared the pathway for my father. We made the fence about five miles long. The deer couldn't get across it. My father walked along the other side of the fence, along the cleared pathway.

The fence at Clear Lake went for five miles down to the lake. My mother was waiting on the other side of the lake, and my father stayed on his side of the fence. When the deer came to the fence, they would follow it down to the lake and then start to swim across. I sat with my brother and sisters next to my mother. We'd warn her when we saw deer coming. Then she'd get into her canoe and paddle up to the deer and spear it with an iron-tipped spear. Some people killed the deer by seizing their antlers and holding their heads under water until they drowned. But she speared them. We didn't go with her in the canoe, because it might tip over. We waited there two or three times a day, and my mother often got deer that way—more than my father got with his gun. After she speared the deer, she'd drag it to shore and skin it.

My mother and father dried the deer meat and preserved it. They pounded it fine and kept it in birch-bark containers. No bones were wasted. My mother split all the bones, kept them, and when she had enough she boiled them in an iron kettle. The grease was also stored in birch-bark buckets. When she boiled the bones, the grease would rise to the surface. Then she'd scoop off the grease and boil it separately, so that all the water was boiled out. Later, when we cooked the dried meat, the grease was used. We must have got those iron kettles from the government when they issued those things years ago. We had copper kettles too.

I never remember being hungry. We always had plenty to eat. One time, though, we were out of flour. My sister was so hungry for bread that she ate the sole of a porcupine's foot. But after we got flour she felt better. The bread was baked by the fire in a frying pan in those days, but some roasted it in the ashes. You take a green stick, wrap the dough around it, and roast it by the fire. We used commercial flour; bought it in a store at Eagle River.

Eagle River was the nearest thing to a town then; the first that I knew. We used to buy tobacco, sugar, salt pork, guns, and ammunition there. They had just one store and a few houses. I sometimes went along with my father when he went there. I wasn't old enough to carry anything. We walked all the way. My father traded hides for the food. He

did some trapping and sold the fur. He also sold any kind of stuff made from buckskin which my mother worked up—gloves, moccasins, and sometimes a jacket. I used to be scared when the white man at the store talked with my father. The white man was a big fat man who talked so loudly that I thought he was quarreling with my father. We didn't know what his name was, so we called him Big Belly Man.

In summer we had to follow the road to Eagle River, but in winter time we wore snowshoes and cut straight through the brush.

In winter time we fished through the ice. One time a fox barked at my uncle, my father's brother, while he was fishing. It's a bad sign when a fox barks; if you hear a fox barking, it means someone in your family will die. It was my uncle's little boy that died. While he was fishing, he thought it was a dog that was barking. He didn't know, because he was under the covering over the air hole. But he thought it didn't sound quite like a dog, so he got out from under the cover and saw the fox.

The same year, we went to Eagle River. There were quite a few Indians camping there in wigwams. They were being hired by people in the town to cut wood. While we were there they had a Medicine Dance and built a Mide lodge. They sometimes put up a Mide Lodge in winter time, when somebody falls sick. That was the first one I'd seen. There was a railroad track nearby, about a half mile away. One time the train went off the track, and two horses were killed. Everybody went over to get some of the horsemeat. They made snow-shoes from the horse hides and sold them for $3.50 to $5.00. They ate the horse meat during the Mide ceremonies.

Our family was among the last to go to get the meat by the tracks. It was in winter. A snow plough was coming. We nearly got killed by it—just crawled from the tracks in time. One of my sisters took her shawl and waved it. Then the locomotive stopped. It nearly hit us, because we were right on a curve, and we didn't see the snow plough coming. There was a steep drop on both sides. So we had a narrow escape.

That winter we used to fast, blacken our faces with charcoal, and go out into the woods, where we built a fire some

place and played around. We weren't allowed to do any work around the house. We had to fast; there was no choice about it. In the morning our parents would put a little food in a bowl with a piece of charcoal on top. You had to take the charcoal and hand the food back to your parents. You couldn't eat the food. Then you'd take the charcoal in your hands and rub it good all over your face. That let other people know that you were fasting and that you shouldn't be given any food.

Indian boys used to fast as much as ten days—take a blanket and throw it over their heads, and lie some place in the woods. But I never did that. Sometimes they took a piece of lead, like a fishing sinker, and kept it in their mouths. That keeps your tongue from getting dry. If the boys who've gone overseas now had fasted like that, they'd never be killed. During the Civil War all the Chippewas who went away to fight came back safely. They all fasted when they were young. Fasting helps you to be a good hunter too and to have a long life.

I didn't fast long enough. I stopped at noon every time. If I'd kept it up longer I'd have more power. My mother used to take pity on me and feed me at noon. She didn't want to see me go hungry. That broke the spell. That's why I never had a dream. Now I'm sorry. I don't know nothing now. But it was my mother's fault.

(Question: "Did your brothers have dreams?")

I don't know. They wouldn't have told me. Indians don't tell their dreams unless they're in great danger or when they're giving a name to a namesake.

You have to do the fasting when you're young. Not after you've been with a woman or after you've used tobacco. After you've done those things, you can't dream. The dreams you have then don't mean anything.

Children don't like to fast, but that's what makes them strong. My mother used to say to the children I was playing with: "Don't play with him. He won't do what he's supposed to do. He doesn't want to fast." After that I'd fast, so that I could play with those children.

My brother made my first bow and arrow for me. I don't know how long I had those arrows or how old I was—just a

small boy. My brother made me two arrows. I tried to get small birds with them, but I never got any. We used to shoot at small game while we were fasting. I always lost my arrows. Most of the time they landed up in a tree, and I couldn't get them down again. When I got one arrow caught in the branches, I'd shoot another one after it to get it down, and then both would get stuck up there. My brother had to make new arrows for me.

One day I killed a little bird by the wood-pile, a little chickadee. It wasn't much bigger than my thumb. When I killed it, I was standing right next to it. My mother took that bird, took the feathers off, dried it, and kept it. She praised me for my first kill. She kept that little bird for a long time. Some time later I killed a big striped chipmunk. My mother singed off its hair and put it away too. Then she put the bird and chipmunk together in a pail and cooked them. They were all dried out. This was for my first feast. They had other food along with it, though.

My mother and father sent tobacco around and called the Indians from round about to attend the feast. The feast was to announce the first two things I had killed: the bird and the chipmunk. After everyone was there, my father got up to make a speech. I didn't get any of the bird or the chipmunk to eat. It was for the others. I didn't eat with them, since I was giving the feast. After everybody had gone, I got something else to eat. I was awfully glad to be able to go out and play after the feast was over, since I had to sit so still all the time. This took place at Sugar Camp Lake. After that feast I killed lots of little animals and birds.

Some time later I was able to make my own bow and arrow. My brother was sitting outside one day, making a bow and arrow. I was waiting for him to get through using the knife, so that I could make my own. My brother wouldn't let me use his knife. I don't know why. I grabbed that knife and seized the blade in between my thumb and forefinger. It bled a great deal. They wrapped it up for me. I still have a scar there. After I had that swollen hand my brother made all of my bows and arrows for me. I couldn't whittle with my bad hand.

There was a lake about half a mile from where we were camping then. We heard a drum beating for two nights over there. It was a water drum. My parents said that there must be a spirit in that lake who was glad about a death that had taken place. A woman had been killed by a train, and she must have joined him; he was doing the drumming. When you cross a strange lake, you put tobacco on the water, so that nothing will hurt you. At Leech Lake there were two young women in a canoe, crossing the lake. One of them began to wonder why the lake was called Leech Lake. While they were paddling, they began to notice that the current was going just like a rapids. The canoe began to stand right up, and the woman sitting in front took off all her ornaments. Indian girls used to wear lots of beads. She took them all off and put them into the lake. The other one didn't know that she should do this. That was the one that had been wondering why it was called Leech Lake. She fell out of the canoe. But before she fell off, she saw a great big leech—three or four feet wide. The other girl saw it too. He was coming through the water in big up-and-down motions, like a worm crawling fast. The girl drowned and died. The leech probably took her to the bottom of the lake. But that showed her why it was called Leech Lake. She should have taken off her ornaments and put them in the lake. That story shows why Indians respect everything. If that girl hadn't asked herself "Why is this called Leech Lake?" nothing would have happened to her. I told that story to explain why we heard that drumming. In the old days Indians used to see lots of things like that, but after the white men came with their steamboats they've stopped seeing such things. Whatever lives under the water is afraid of thunder. When they use dynamite for blasting, those things go away. They go underground somewhere.

When the Indians left Eagle River, they didn't all move at once. They left one at a time, and our family was the last to go. We spent the winter there, cutting wood, but everybody left in the spring time. When we got home, we went sugaring. My father took a big log of basswood to use as a trough to hold the sap water. We hewed it out inside. We

lived in a **wanagekogamik,** which is shaped like a house. It was about seven or eight feet high. The trough was inclined, so that it led into the house. The trough was about twelve feet long. Four feet of it were inside the house, along the center, where it was placed over a fire. Hanging down from a pole along the middle of the **wanegekogamik** were a lot of great big kettles—big ones in the middle, little ones on the side. The trough was tipped, so that when we poured sap water into it outside, it ran down into the house. We poured the sap water into it after all the kettles over the fire were full. You had to keep stirring the sap.

After my father got everything ready for the sugar bush, he went hunting and trapping and would be gone about a week or two. Then he'd be back with the meat, stay awhile, and then leave again. I stayed in the camp with my mother and brothers and sisters. I hauled sap, dragged poles in for the fire, maybe hauled water for my mother; cut wood. My brothers cut wood. We needed a lot of wood for sugaring to keep the fires going.

We had birch-bark baskets, big **makuks,** in which we kept the sugar. We had over ten of them. A hundred birch-bark buckets is equal to one **makuk.** We had birch-bark buckets on the ground, next to the trees, collecting the sap. A birch-bark bucket is called **biskitenagun.** I used to empty them into a birch-bark pail, called **nadubagun,** which I carried from tree to tree until I had enough to take back in the trough. It was hard work, lasted all day. Sometimes I'd find that I couldn't empty all of a **biskitenagun** into my **nadubagun.** Then I'd drink it up. But if I couldn't drink it all, I'd throw the rest away. This was a wasteful thing to do, but I didn't want to make that trip all the way again. It was usually so far away that you couldn't see the wigwam. You'd have to go back and forth all day. First you filled up the pails and kettles of all sizes which hung over the fire. When they were full, you filled up the trough. At that time, there were only four of us—my mother, my sister, my brother, and me. We had to work all the time. My mother worked very hard. She'd stay up all night to keep the fire going. There was snow on the ground then. It was in the latter part of March,

through April—sometimes up to May first. When the sap water turns milky, it stops running.

There were other families, other camps nearby, maybe half a mile or three quarters of a mile away. I sometimes ran away, because there was so much work to do. Then I'd go and visit other people, especially a boy called Little Stone, who was around my age. We used to play together. One time, after I had breakfast at home I ran away to play with him. We got hungry around two o'clock and shot two birds with our bows and arrows. We carried matches at that time and made a fire and roasted the two birds. When I ran away like that my mother had to give me a talking-to about it. But she didn't really punish me.

One time, when we were just about through hauling sap, I met my sister, and she was mad about something. She was going to hit me with a **nadubagun,** but I hit with my fist, warding it off, and broke the bark. Then I ran away and played by myself. I came home late in the evening. My mother didn't say anything to me about it this time, since the sap-hauling was about all over.

One time I had to go home to get a pail. The sugar-bush was about half a mile from home. While I was walking, I heard a rustling noise. I turned and saw a bunch of snakes all coiled around. I stood and looked at them, and then I noticed one special snake right in the middle with his head raised way up. I saw a log and jumped over it. I thought, I sure went fast that time. When I came back on the return trip, I didn't take the same road. I went a different way around. I never went that way again.

One time my father jabbed Joe Jackson in the back with a pocket knife. Everybody was drunk. Everybody was fighting around our wigwam. I heard my mother crying, and my father saying, "He can't be killed. I only used a pocket knife." Then they came out of the big log house which was close by our wigwam. An Indian called Big Stone lived there. Joe Jackson lived in a wigwam nearby. Only four families lived around there. There were three main ones—three brothers, Big Stone, Big Tom, and Big Frank. Big Tom's wife's mother was related to my mother. I don't know how. The three brothers all called my mother sister. They adopted her

to take the place of their own sister who died. The three brothers all worked together with my father. They were always fighting. Big Frank did most of the fighting, but Big Stone usually started it. They weren't afraid of him, although he was a medicine man. They pulled his hair and knocked him around. He was small. His brothers were big, and they always beat him up. But he could talk. The three brothers were all Mide priests. Big Stone also cured with the bones and shook tents (the conjuring lodge, or **jizikun**).

(Question: "Did people ever talk about Big Stone taking the shape of a fireball?")

They talk about people doing that even now; but the one that's done it never says anything. The young people stopped asking the old men how to do it, so now nobody knows how to do those things. There were men who could turn themselves into fireballs, owls, wolves, coyotes, dogs, fox, cats. Old Masos could do that. He lived in Reserve, but he could be here at the same time. It didn't take him long. That's why people burned his house down three times—to get at his medicine.

(Question: "If a medicine man does something to you, what can you do about it?")

You can't do nothing. That's why people used to be afraid of those men. Sometimes when they met men like that, people would get numb and dizzy. People used to see those lights on the trail. Sometimes the lights would pull apart, then come together again. Whenever they met one of those lights, people could hardly move. Maybe they'd see a dog or cat nearby. After a while they'd come back to normal. Some would just fall down. When those old men moved as fireballs, they could go right through closed doors and windows.

The first white man to come to Sugar Camp Lake was Fred Trip. There was a store there where Fred Tripp lived; it's called Jones' Store now. Fred Tripp didn't run the store; he just lived there as a homesteader. He had a hotel in Tomahawk Lake. One winter we didn't go anywhere but stayed in the neighborhood and cut wood for Mr. Tripp. He hired us. I helped work the two-man saw with my brother. My father split logs and piled them up. We did that all winter. My

father didn't hunt then. Mr. Tripp fed us and got our grub for us. He brought provisions from Rhinelander. Instead of getting paid by the day, we got paid by the cord of wood: 75¢ a cord. I didn't know much about sawing then, and we didn't have a very good saw. The white man didn't know how to saw well either. We used to get only two or two and a half cords a day.

We were living in a log cabin by that time. There were lots of log cabins at Sugar Camp Lake then. I don't remember when we stopped living in a wigwam. When we traveled away from home we still lived in wigwams.

After a while Tripp began to pay us by the day. I got 75¢ a day. My brother got more, since he was doing a full man's work. We were cutting big logs. Mr. Tripp sold it for lumber. I gave my 75¢ to my mother.

One time some people at Sugar Camp Lake had a medicine dance and gave my father a gun. He brought it home with him, and some time later he gave it to me. I wasn't quite twenty. It was a .38 rifle with short bullets. In those days a box of shells cost 75¢. I took my gun to hunt by myself. I killed anything I could see—rabbits and porcupines. I only got something now and then.

One day my father and I came here to Flambeau. We started at night and came through the woods on snowshoes. That was the first time I'd ever been to Flambeau. We tried to catch the train at Tomahawk Lake that afternoon. When we got to the station we were told that we could get the train at Woodruff. We walked along the railroad tracks. It was a long and hard walk, because there was no snow on the railroad tracks. We didn't wear our snowshoes; we carried them on our backs. We walked as fast as we could. When we got to Woodruff, we started across the bridge there. This is where I got scared. But we got across all right. We walked to the other end of town. Then we heard the whistle of the train. The train went by fast. It didn't even stop at the station. So we walked all the way to Flambeau. There were a lot of people at Flambeau; Herrick's mill was running night and day then. [3] We went to the Indian Farmer's Office, the

[3] This must have been around 1897.

Agency. There was an interpreter there, a half-breed, Charley Cauthier. He interpreted for my father. My father asked if he could be given some allotments. They said yes. They made out a paper for him. The allotment was made out by the Farmer and my father. They gave us a paper to give to old Herrick. These allotments were to be for me and my brother. They told me and my brother that we'd get some land, but first we had to find some land that hadn't been allotted yet. When we got all through at the Farmer's office, we came out of there and my father said, "Now let's go and look for old Charley Head Flyer." He was an old half-breed who had hair down to his shoulders. We found him and asked if he knew of any place with timber on it that nobody had claimed as an allotment. He said that he didn't know of any place, but added, "If each of your sons gives me $25, I'll tell you where there is some with timber on it. My father agreed to that. I didn't know what it was all about. My brother didn't either. Neither of us knew why we had come all that way. Only the old man knew, and he never explained anything to us. He was already allotted, but my brother and I weren't. We had no money at that time, but the paper that we had with us to give old Herrick was to let Herrick have the right to cut timber on our land when we got it. The storekeeper took a piece of paper and wrote out the allotment number that was on the paper we were to give to Herrick. Then we went back to the Farmer's Office again. They wrote some things down and then sent for a map showing these two allotments. Then we went to Herrick's office and handed our papers over to Herrick, who gave them to a clerk. They had a lot of maps around the wall. It looked like a post-office.

From there we went to the Old Indian Village. We went to old Chief Amour's place, and stayed there. I was scared of all those people.

Most of the Indians there then had houses—log houses and frame houses. At that time some of the Indians had a lot of money which they got from selling timber on their land. Two or three years afterward, my father and I came to Flambeau again. I met my friend Joe Corn there. We went

to a medicine dance, stood outside, and fooled around. Joe was about sixteen or seventeen then. After a while Joe said to me, "Let's go over to the lake." I said "All right." On the way we stopped in front of a deserted wigwam. We heard someone inside of there. We stood and listened. Some people were whispering; I heard someone say "Give me that." When Joe heard that, he got scared and turned around and ran right by me, back the way we had come. I ran after him. Then we heard two revolver shots behind us from that wigwam. We heard the bullets hitting the tree branches close to the wigwam.

We got back to the medicine dance., We didn't go in, just stayed outside. Finally my father called for me. The people all came out of the lodge. We went out onto Lake Pokegama. Most of the people were drunk. We heard shooting every once in a while on the ice. My father and I went back along the railroad track to the depot. About halfway there was a big log across the trail. We saw something lying on the side of the trail. My father said, "Who is this lying there? I think this is someone who is drunk." It was an old lady, my father's aunt. She said, "I'm not drunk." "Then why are you lying here on the snow?" said my father. After we had talked with her a little while, we left her and walked on until we reached the railroad track. Then we walked to Chief Amour's place.

While we were staying at Amour's place, the Indians had a Drum Dance and asked us to stay for it. During the dance old Amour gave one of his horses to my father. Then a little later he gave another horse, including the harness. A little later he gave him a sleigh. At a Drum Dance they give presents like that; it's so that the man who gives the presents will live a long time. You don't expect anything back, like in a Squaw Dance.

After we got through with the dance, my father and I took the horses home. Old Amour and his wife went along with us. We had a hard time getting through the snow with the horses. They were all tired out and took their time going. As soon as we got home, we started building a barn for them. Old Man Amour helped us. He was my father's son-

in-law; he married a half-sister of mine. He wasn't very old; they called him 'Old Man' because he was a chief then.

I was glad that we had those horses. I drove them around all the time. We had to feed them as well as ourselves, and we had a hard time of it. Most of the time we went hungry. We thought more of the horses than of ourselves, when it came to feeding them. We hadn't made any preparation for them. We didn't know we were going to get some horses. But after people knew that we had some horses, they started hiring them to draw wood. We hauled wood for different families. That's how we got our food and the horses' food. We hauled wood for different families. We did everything to pull those horses through the winter. That spring we made no sugar. We were always busy with the horses. In the summer we made 'marsh hay' for them. We put up six stacks for them. One day we saw smoke coming out of the 'marsh hay.' They sent me over to find out what was wrong. When I got there, all the hay was burnt up. All the stumps were smoking.

At that time old Herrick was cutting my father's timber. My father got ten dollars every month. My fathter was cutting timber at his homestead and was selling logs—nothing but pine. The horses hauled the logs to town that winter. There was a little engine that hauled the logs to Rhinelander—a narrow gauge track. That was how our horses got their feed that winter.

During the next summer we had a big field, and we planted oats and timothy hay in it. After we'd planted the oats that spring, my father said, "Let's go to that old camp." He had a little gunnysack with him. I didn't know what was in it. He had an axe too. He didn't tell me what we were going there for. When we got to the old camp, my father said, "Yes, there are signs of him here." We went along the edge of the camp and there, by the side of a road, my father made a small log house about three and a half feet high. It was a trap. Then he dug into his sack and brought out something wrapped in birch-bark. He put this thing inside the log house at the far end. There's a pole when they get to the bait, which falls, letting a larger log fall down to trap the

animal inside the house.

After we'd finished making that trap, we went along the road a little further. There my father cut another pole three or four feet long. He split it at the end. Then my father dug into his bag again and took out a smoked fish, a sucker. He stuck it into the split end of the pole. He placed the pole so that it was leaning in the direction of the little wooden house about 500 feet away. Then my father said, "Now we'll go home."

Four days later my father said, "Let's go see our trap." We went. When we got there, there was a bear in the little house. But he was dead and spoiled already, so we didn't use him. We went back home empty-handed.

Toward the west end of Eagle River there was a bunch of Potawatomis staying in wigwams. My brother was living near there somewhere. There were two other men with him. One day my brother and these two men went to town and got to drinking. They stopped to visit the Potawatomis and gave them some of their liquor. Finally my brother fell asleep. The other two men, who were brothers, stayed awake and soon got into a fight with the Potawatomis. The Potawatomis were getting the best of it, so the brothers woke up my brother were getting the best of it, so the brothers woke my brother up and said, "These Indians are killing us!" My brother woke up and started to fight. After the fight was over, the Potawatomis ran away and left the three men behind. One of the Potawatomis had been killed. The other Potawatomis went to town and told on my brother and his friends. They sent men to look for them, and put my brother and his friends in jail. When they had the trial, my brother was blamed for what the others had done. They said that he'd killed the man. Those two men were given two years. They gave my brother six years. They took the three of them to Waupun penitentiary. The two brothers died in jail before their term was up. My brother died when he had just one more year to serve. The Potawatomis did something to those three men (sorcery). That's why they all died in prison. I never went to visit my brother in prison. I never saw him after he went to jail. They never sent home the bodies of

those three men. They just buried them at the prison. That was my oldest brother I've been telling you about. My brother's wife stayed with us once in a while. He'd had three children by that woman. Then my other brother married her. He lived with her, but they had to wait for two years after he'd died.

I went through the Midewiwin the first time when I was about five to seven years old. I don't know why I went through; don't know if it was due to sickness or what. I don't remember much about it, except that while we were setting around the heap of dirt in the lodge the Mide priest shouted at me and made me frightened. He was an old man wrapped up in a blanket—some relative of mine—and I guess he shouted so that I would remember what he said. I went through the Midewiwin twice. The second time was when I was about eighteen.

I went with my brother to hunt, shining deer. We set out at about six o'clock one evening in a birch-bark canoe and went up the river about half a mile. There was a lake there. Then we came to a long boom stick—to hold the logs back—stretched across the river. We had to lift the canoe over the boom stick. As we were lifting the canoe, I felt a sharp pain in my side. I couldn't sit still in the canoe. Whichever way I turned, my side hurt. Before sundown my brother asked me why I couldn't sit still. I told him about the pain. He said "Why don't you go home then?" So we turned around and paddled home. After we got home I groaned in my sleep all night. My mother, who was in another tent close by, heard me groaning. They woke me in the morning to eat breakfast. I still had an awful pain. I ate a little breakfast, then went back to bed. My father went out and was gone all day. In the evening he came home again. He had gone to get some (Indian) medicine I could use. We boiled the stuff. Then I tried to drink it. It was bitter. The next morning my father set out again and was gone all day. Along about five o'clock he came back. He came with Old Man Hay and his wife this time. He had gone to the town of Eagle River to fetch them.

In the evening Old Man Hay started to doctor me. He used those bones to doctor me. First he told me to lay on my left

side. Then he put the bone right on the place where my pain was. He pushed his head down close and kept pushing as hard as he could push on that bone. When he pulled the bone away finally, the skin there pulled back. That's when it hurt most of all. He started twice to doctor me. The second time he did the same thing he did the first time. When a sucking doctor starts to cure, he first tells the people there about the dream he had at the time that he was fasting. Old Man Hay did that. Then my father beat a War Dance drum. Old Man Hay shook a rattle while he doctored me. He put a little dish next to him, with a little water in it. The two bones were lying there. They were about one and a half to two inches long. He didn't touch them with his hands but picked them up with his mouth. He didn't even have to pick them up with his mouth. His power was so strong that when Old Man Hay leaned over the dish, the bones stood up and moved towards his mouth. He swallowed the bones twice and coughed them up again. Then he put the bone to my side. After he'd finished sucking, Old Man Hay drew out some stuff and spat it into a dish; it looked like blood. Old Man Hay showed it to me and to the others and then threw it into the fire. If he hadn't drawn the blood out, it would have turned to pus. And sometimes, when the pus bursts inside, the person dies. My father drummed all the time that Old Man Hay was doctoring me. He didn't sing, but Old Man Hay sang a little bit at the beginning every time he doctored me. He put the bone to my side four times and got blood out each time, but the last time he doctored me there was very little blood. It was the same every time he doctored me. All we gave him was a piece of cloth and some tobacco, and gave him his meals. After he had finished doctoring me, Old Man Hay said to my father, "One time they had a medicine dance. You took the hide that Tom got in the medicine dance and gave it to someone else. You promised to give him another one in place of the one that you took from him. Sometimes he thinks about it. That's why he is sick now."

I had never thought about that hide, but I guess the old man knew.

(Question: "Did your father remember about that hide?")

Yes, I suppose. I suppose he knew all about it.

During the next morning they doctored me again—same way as before. The two old people, Old Man Hay and his wife, stayed right there with us. Then my mother started cooking, and they were making preparations, and I heard my father say that I had to join the medicine dance. Soon after that we had a feast. At the feast they gave me a little shell to put around my neck. Old Man Hay stayed with us four days. Every morning and evening he doctored me with the bones. At the same time I kept drinking the bitter medicine. As a result I got a little better. Later we moved to Eagle River to stay with Old Man Hay and his wife.

One day my father got sick. He was so sick he was pretty nearly crazy in a short time. He had bad readache spells. I called on one of the old men to doctor my father. This Indian doctor told him why he had those headaches. "While you were at Flambeau somebody did something to your hat (sorcery). There's nothing we can do to make you well." This doctor didn't do any curing. He got his information from dreams. My mother thought of having my father go through the Midewiwin. We used everything we had—all of the blankets and goods we could get hold of. They had a medicine dance for my father. He felt good for a little while after that, but then he went blind. He could see a little, but not much.

This all took place in the fall. I got to thinking. What can I do to help pull my parents through the winter? There were only three of us then. My sister had got married to Little Stone a while before that. My brother had married my oldest brother's wife and was living at Lake Vieux Desert. I got to thinking. I guess I'll take my parents away to some place where I can hunt in the woods and bring them through the winter.

We went toward the town of Eagle River, driving a wagon with our two horses. We passed Eagle River and pitched a camp, and the next morning went on to Long Lake. That's where we spent the fall for two months, where I did my hunting. When winter came, I didn't know what to do. I thought of my brother at Lake Vieux Desert. One day I started off from camp to find out whether Lake Vieux Desert was frozen.

My brother lived at the other end of the lake. On this side of the lake there were some Indians; my mother's brother lived there. My uncle told me that the lake had frozen over just two nights ago. So I took a chance and decided to cross the lake. The ice held all right. I carried a big long pole with me. When I got to the other side, I saw my brother's wife, and the rest of the people there, but my brother wasn't back from hunting yet. At my brother's place there was Old Man Hay, the man who had doctored me. Old Man Hay said to me, "You're trying to kill yourself, crossing the ice like that." "I don't think so," I said to Old Man Hay. I slept at this old man's place. Later that evening my brother got back from hunting. I told him where we were camping. The next morning I went back to my parents. I told them that we would go to stay at Lake Vieux Desert.

My father was sick all this time. It took a day to get to my uncle's place. We stayed there. My uncle lived in a frame house, but we built a wigwam outside. After a while we moved across the lake. My brother helped me take my father across the ice. We dragged him across on a hand sleigh, and my mother followed behind. It took about three quarters of an hour to get across. We went into my brother-in-law's home.

After we got to Lake Vieux Desert I used to go hunting with my brother, but for a long time we didn't get any game. We killed nothing at all. Old Man Hay wondered why we didn't get anything. One evening my brother's wife cooked our rice in a little pail, and we placed it before Old Man Hay. Then he got out his water drum and prepared it. When he got it ready, rice was dished out to everyone who was there. Old Man Hay sang for the hunters to get something. That's why he sang. While he was singing, we ate the rice. Old Man Hay said, "Listen. You will hear somebody when I start to sing. Somebody will come here." There were no children there to make any noise. I was lying there with my eyes closed, stretched out on one of the bunks around the wall of the wigwam. When the old man started to sing a dancing song, it sounded good. I listened to it with my eyes closed. Then I heard the door of the wigwam slam shut. I opened my eyes

and looked around to see if anybody had gone out, but everybody was still there. I closed my eyes again, listening to the old man singing. After a while I heard that door slam again. I looked again to see if anybody had gone outside. But everybody was still there.

The next morning my brother and I went hunting. Toward noon the same day I got a great big buck. I took nearly all afternoon to skin it. I couldn't skin it with my hands, I had to use a knife. My brother got a deer too—a doe. From that time on we killed deer every other day. That's how Old Man Hay helped us.

The rest of the people at the village were all hunting from different camps, which they'd set up in the fall, and were all scattered through the woods. We were the only ones living at the village. There were a lot of people out in the woods. In November they all came back to their homes at the village.

My father was still very sick, so we called on Old Man Hay to doctor him. It was late in the evening. After he had doctored him, Old Man Hay said, "I don't think it's sickness that's doing this to him. I think it's the work of someone." He went on to say, "Tomorrow evening we will put up a tipi, a **jizikun** (conjuring lodge); then we will know if someone is doing this."

The next day we didn't go any place; we worked all day putting those sticks in the ground. The ground had frozen, so we had to work hard so that the stakes would be solid. In the evening we had a fire outside of the tipi. The old man went into it and had his pipe handed in to him. While he was smoking, the bells and the rattle on the tipi began to shake and make a noise. The old man was talking inside the tipi. He had a little War Dance drum, which he had given to the people outside the tipi. He told them to pound it. Then he began to sing inside the **jizikun**; pretty soon it began to swing back and forth. Someone was talking way up on top there, where there was a balsam bough about three feet long sticking out on top, above the other stakes. This was an open lodge—not covered on top. Some of the voices I heard were about four feet from the ground. You can't understand those voices, but you can hear them. The one way up on top

is the only one you can understand. The person on top told about how my father had gone to Flambeau one time. He went with an old man who had no money at the office in Flambeau. The Farmer had told this old man, "Your money is not here. It's in Ashland. Your money won't be here until the end of the month." I didn't remember the date of that visit, but we had gone to Flambeau, and my father had been an interpreter for this old man. The Farmer had told this old man, "If you go to Ashland and see the superintendent, he will give you your money." I suppose this old man thought he'd like to go up there, but he couldn't understand the white man's language. This old man asked my father to go along with him as his interpreter. My father could speak English pretty well. This old man said, "I'll pay your expenses to Ashland." So they went up there. When they got to Ashland and talked to the superintendent, the old man got $50.00. Then they returned to Sugar Camp Lake. Some time later this old man asked my father for the money that he'd spent on the trip to Ashland. My father didn't want to make that trip. He'd just gone to interpret for the old man. That's the only reason he'd gone. When they made their agreements to go, they'd never said anything about returning the money later. After this old man had used up his $50, he asked my father to give him back the money he'd given him to accompany him to Ashland. My father didn't return that expense money to the old man. This is where it all came from. That's what the voice on top of the **jizikun** said. He told this whole story about the trip to Ashland. We had a hard time understanding him, but that was what he was talking about. The person at the top of the tipi said that when my father went to this old man's house for a visit, the old man did something to my father's hat. The person up there also told Old Man Hay how to doctor my father. The spirit doesn't speak very well or very clearly. There are a lot of words he can hardly pronounce. When he talked about the money, he referred to it as a piece of tin. We asked him questions to make sure of what he was saying.

After a short time my father was pretty sick again. His head swayed from side to side. He couldn't see at all; he

was completely blind. He had bad headaches. Another old man came to the village then. He had been hunting and was just coming home. At that time we used to sell meat to the logging camps, so I had a few pennies in my pocket. I went to that logging camp and bought a half pound of tobacco. Then I went to the home of that old man. I gave him the tobacco and said, "You may doctor my father. That's why I'm giving you this tobacco. I will give you my horse too."

The old man didn't say anything for a while. Finally he said he would try to cure my father. The next morning the old man and his wife came over to our place. I didn't see anything that he was going to use to doctor my father. After he'd sat there a while, he asked for a tiny birchbark basket about an inch square. We made it right away. It wasn't supposed to leak. Then the old man asked for a little water. He poured a little of it into the basket. Then he took a little woven bag about four inches long and from it he took a little bundle. Then he took the end of a knife blade and took a little of the stuff the bundle was made of and put it into the tiny birchbark basket, which had a little water in it.

Then the old man told me to take four hairs from the crown of my father's head. I took four hairs, just as he said, and tied them up as tightly as I could, in a little round bundle. When I'd done that, I handed it over to the old man, who put it into his little basket. That old man had some feathers that looked just like cotton. He made a tiny bundle of those too and put them into the little basket. Then the old man told me to cut some more hairs from the crown of my father's head—as close to the scalp as I could cut them. After I'd done that, he handed me his pocket knife and told me to cut my father's head on top there. He told me to make a hole in his head clean down to the bone. I hated to do that, but the old man coaxed me to do it. I sat and thought about it a while. I thought, if he should get well, it would be worth it. So I did it. I took the knife and pushed it down in. I felt the knife go through one layer, then through another one, until I hit that bone. Then I cut along a little ways, so that there was a hole in his head half an inch long. Then I pulled by knife out of there. My father didn't feel

it at all.

The blood came out of that hole just black. It kept pouring out of there for quite a while. After the blood had stopped flowing, I took the little bundle of four hairs out of the tiny basket and stuck them into the opening in my father's head. Then I stuck the bundle of feathers in there too. This is what the old man instructed me to do. On top of the little bundle of feathers the old man put some more medicine. Then he cut out a round piece of paper—about an inch across—and stuck that on top. Then he put a cloth or a white rag over my father's head and tied it under his chin. That's all that the old man did. Then he sat there for quite a while telling us stories. In the afternoon he and his wife left us and went home. We broke up our pair of horses then, so that we had only one left. That night my father slept good. From that time on he got better and better every day. We stayed at that place all winter.

Soon after that I married one of Old Man Hay's daughters. I left my mother and father with my brother. He took care of them. I went to stay at my father-in-law's place. It was a log house. Those living there included her mother and father, the four daughters, two sons, the oldest daughter's husband, and me. The oldest daughter had no children then. We stayed upstairs by ourselves, my wife and me. The rest were all downstairs. We were in the same village where my parents lived, so I often saw them. I learned a lot from Old Man Hay about the Midewiwin. My father had taught me some things before then, and I also learned from asking questions of other old men. But I learned most from my father and Old Man Hay.

The same winter I went to work in a logging camp at Land O' Lakes. That was my first job. I had a job sawing and cutting logs. I had to leave my wife at home and go to live in the camp. But I went home every Saturday and spent Sunday at home. We got paid once a month, and I took my money home. I stayed in a long log house at the camp with two tiers of bunks down the side. There were about fifty men there, mostly white men. We got good meals there—all kinds of bread and cake—everything. After we'd cut all

the timber—about forty acres—I went to work at the landing. Horses hauled the lumber down to the river, and we'd dump the logs into the water. Then that spring I went on the drive down the river. We worked all day for only $2.50 a day. They charged us for meals at the camp. I also bought food at the camp to take home to my wife and her folks. There wasn't much left of my wages by the next pay day. It was the same every time. We couldn't save anything.

When they floated the logs down the Wisconsin River, I went along almost as far as Eagle River. When the Wisconsin River joined the Buckatabin River, some other people took over—white loggers—and took the logs down the rest of the way. We used to watch at the bends of the river, so there'd be no jams. We had long poles, and they put us at different places—sharp turns in the river, where the logs would pile up. We had to stand there all day pushing the logs back into the stream. We had four meals a day—same stuff all the time—ham and eggs, bacon, always the same. Pretty soon you get tired of it. You're dirty all the time, doing that work. You get chapped around the mouth; you're thirsty all the time, and you keep drinking water. And after a while your skin changes color—gets darker. (Question: "From sunburn?") No, from the water, from being around the water. That makes your skin turn darker. Sometimes I had to ride the logs down the river. It was dangerous, but I never got hurt. We had special spiked shoes. They charged us $6.00 for them, and we also got charged for the "corks", the spikes 75¢ a box. While we were going down the river on the drives there were no week-ends off. When it was hot days, if they caught you sleeping, you got only $1.50. The boss went up and down the river. There were two of them, one on each side of the river, one going one way, the other going the other, both looking out for fellows who might be sleeping in the bushes. I never slept. I was working so hard, moving about so much, that I never felt sleepy. We worked nearly a month on the river.

Then I went home again. We worked on the garden at my father-in-law's place, made it a little bit bigger. We planted potatoes and corn. One day my father-in-law called me and

Jim Williams, who was married to his oldest daughter, and told us that we ought to make some birch-bark canoes. I knew how to make them, since I'd watched my father make them every summer. I'd watched my mother gather the pine roots that were used for sewing the sides of the canoe, and I'd watched them gather the cedar, the birch bark, and other materials, so I knew how it was all done. We went to make the canoes at Black Oak Lake, since there wasn't any birch bark at Land O' Lakes. We stayed there for two or three weeks, working every day. After we'd made three canoes, we took them home. We used these canoes for fishing, hunting, and shining deer. Whenever we had a good catch of fish, we'd sell it at ten cents a pound at Phelps. We sold meat there too at ten cents a pound.

A year later, during the summer, I lost my canoe. One of my brothers-in-law and a friend of his were using the canoe, when the game warden came along. They beat it when they saw the game warden coming and left the canoe behind. The game warden took the canoe. I couldn't ask him for it back, because we were off the reservation there.

That summer, when I still had the canoe, they passed some tobacco for a Drum Dance across the lake. We paddled across the lake to the dance. After the dance I intended to hunt and shine deer on the way home. I went a long ways around the side of the lake, but I didn't see anything. My wife and my first child, a little boy in the cradle-board, were in the canoe with me. I quit shining, and then we paddled home around the edge of the lake. I could see the ribs of the canoe, so I said to my wife that it must be getting to be morning. I turned my head and saw that the sky was getting light. When I turned to look behind me, the boat turned to the shore, and I had a hard time trying to steer the boat straight. The boat tipped to the left, for a limb sticking up from the bottom of the lake got caught on it. I jumped into the water and thought, I'm going to kick so that I can get up to the top. I thought that by jumping into the water I'd keep the canoe from tipping over. I did it to save the woman and the kid. When my head came up into the air again, I saw the canoe going ahead along on the water. I made a splashing noise

with my hands and feet. That woman didn't even know that I had jumped overboard in the dark. She was just paddling ahead, and when she turned and heard me splashing behind her, she started to cry. I caught hold of the back end of the canoe, where I had been sitting, and asked that woman how the baby was. She was still crying. She said, "The baby is all right." Then I told her to paddle to shore. About a hundred feet from shore, when I could feel bottom with my feet, I towed the boat to shore. The canoe was already half-full of water, since the limb had torn a hole in the bottom. That woman was still crying when I got to shore, but the baby was still asleep. We started to walk home then. It was getting toward dawn. That was the only time I ever went swimming so early in the morning.

Most of the time in those days I hunted in the woods for food for my family. I stayed with my in-laws for one year. The next year I built a log-house nearby for us to live in. In the spring of the year we made our own sugar—just my woman and me and our children. I had two boys then. The oldest was about four. The youngest was just learning to walk. One day, after I got through cutting the wood we needed to boil the sap, I told my wife that I was going out onto the ice to fish through the ice. I said, "When I get back, we'll go after the sap, and we'll boil it tonight." Then I went out onto the ice. I fished and got three pike and came home along about four o'clock. I couldn't see any smoke out of the wigwam at our sugar camp. We had had a fire going there before, but it wasn't going when I came back. When I got to the door, I heard my children talking. My wife was there. She held the smallest child in her arms, and the other was sitting alongside of her. I said to her, "Why don't you make a fire?" She said, "There's a white man by the wood pile." I went out of the wigwam and saw that white man sitting on the wood pile. He said "Bo zho" (bon jour). Then he asked me, "Where is the road that goes to Watersmeet?" I told him where it was. Then he asked me if he could have something to eat. I took some wood from the wood pile and went back into our wigwam. My wife got ready to cook. I went outside to clean the fish, while she made bread. Then we

called the white man to come in. He sat down across the fire from us. We put food in a dish and put it in front of him, and he ate it all up. He must have been hungry. It was getting kind of late in the evening, so the white man asked if he could sleep there overnight. I asked my wife about it. She said, "Shall we boil the sap tonight?" I said, "If the white man sleeps here tonight, we can't boil our sap." So we didn't do it that night. The man spent the night in our wigwam. In the morning he had breakfast with us. Then the white man took a piece of velvet cloth from his pocket. Inside of it were some gold watch chains and rings. The white man asked my wife to pick out one she liked. Then he went off. I never saw him again. I guess that was what the white man was doing—selling those things.

After a while I left Vieux Desert and went with my family to Robbins. That fall Little Stone and I cut logs and worked for Robbins, the man the town was named after. My father and a white man were also working there. The white man had only one arm and couldn't do much, so my father had to do most of the work, although he still couldn't see very well. They were cutting tamarack. The white man could pull the saw with his good hand. One time, when they cut down a tree, it didn't fall right down but fell against another tree. It bent when it fell and didn't break off at the stump the way it should. My father cut the stump some more, because he was the only one that could do it. When he'd cut it through, the tree slipped back and caught him right in the stomach. He was knocked back against another tree and killed. Little Stone and I were working somewhere in the woods. It was Fred Tripp who brought us the news that my father was dead, Then Little Stone and I came home. After a while a team of horses brought my father to our house. We had a funeral the next day.

I kept on working at Robbins all winter, trying to make a living. I built a new house there. That summer my wife and children and I lived in that house. My mother stayed in her old house. One night, in the middle of the night, some people woke up my mother and asked her to come and be midwife for Fred St. Germain's daughter. So she went. They

had no mattress at this place. (A mattress is usually used in these cases; the expectant mother lies on a mattress placed on the floor). My mother told the husband of the woman to get a mattress at her own place. There was a mattress in her kitchen along with all the other things she needed—rags and things, scattered around. When this fellow reached my mother's place, he struck a match to see. Then he threw it on the floor. All that stuff in the kitchen took fire, and the whole house burned down. While I was sleeping, my wife woke me up and said that something was happening. I got up and went outside. It was too late to do anything. The lumber was dry, and the fire had a good start. There was nothing we could do. Toward morning there was nothing but ashes—nothing left except the iron from the stove and the sewing machine. Then my mother had no home. After that she stayed at her daughter's house.

Two months after that my wife got sick. She had a baby. We built a wigwam for her, where she gave birth to a boy. She had to stay out in that wigwam for a week or ten days before coming back into the house again. But she was up and around before she got well. While she was out in the wigwam, she had a visitor, a drunken man. She ran out and came back into the house. Her feet got wet from the dew on the grass, and the stuff that was in her from having the baby worked up to her head instead of out the other way. She died two days after that. At that time I had seven children living, but the little baby died two or three months later. There's only one boy and my daughter living now.

I kept only two of my children—two boys, the first and the fourth. The other four were taken care of by grandparents. My wife's father and mother took care of them. They were all brought up at Lake Vieux Desert. After my wife died, her father and mother visited us at Robbins and took them back with them. I didn't see much of them after that. My brother took my smallest baby, the seventh; but it didn't live long. I moved to Flambeau a year after my wife died and put my oldest son in school there. I never went to see my kids at Lake Vieux Desert, because there were three of my wife's sisters living at that time, and they had a way of saying

that if I went back there, they (my wife's sisters) would kill me. They thought I should have married one of the sisters, the youngest one. But she was going around with another man. That's why I didn't marry her. The men didn't mind so much. They didn't care. It was the women who were angry. I don't know if they really wanted to kill me. That's what I heard. So I stayed away. It was a long time—maybe ten years—before I saw my two youngest kids again. My boy was the first one to come down here. My daughter didn't come until after she was married.

Two years after I moved down here, I put my third son in school. Three years after that the oldest one started to get sick. It turned into T. B. He was sick about two years; then he died. After school one year, one of the teachers asked him to go along with him to Miami Beach, Florida. He brought a paper home for me to sign, saying that I would let him go; but I didn't sign it, because I didn't want him to go away down there. I wanted him to stay with us. That boy signed the paper himself and went anyway. He went to school there. Some time later he wrote me a letter and told me that he was sick. I sent him a letter (dictated) and asked him to come home. He wrote back and said that they wouldn't let him come home. I wrote to those people and told them to let him come back home. They wrote and told me that maybe after a while he'd get well. Some time later my boy wrote again. He wrote that he was getting worse. I didn't know what to do to get my son home. I hired someone to write another letter to the people that were holding him there. I wrote and told them that my son was very sick and that I wanted to see him. I wanted to see my boys if anything went wrong with them. In a week's time a telegram came saying that my son would get off the train here the next morning. I went to the depot the next morning to see him. He was there. He got off the train. (Tom didn't speak for some time). He was pretty sick. He died about a month and a half later.

I had a hard time for a while. There was no work at Flambeau then. The Mill wasn't running any more. We made beadwork, little birch-bark canoes, moccasins, and stuff like that, and sold them to the tourists. We kept going all right, though.

A REMINDER

The Directors of the Wisconsin Archeological Society at the January, 1954 meeting voted to place the society on a 1 January fiscal year basis, commencing 1 January 1955. Members whose dues are payable 1 January, 1954 thru 30 June, 1954 will be credited to 1 January, 1955. Members whose dues are payable 1 July, 1954 through 31 December, 1954 will be credited to 1 January, 1956. The Wisconsin Archeologist will continue to be mailed to all paid-up members.

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EDITORIAL—Robert Ritzenthaler, Chairman. Kermit Freckmann, Dr. H. W. Kuhm.

PROGRAM — Arthur Niehoff, Chairman. H. W. Cornell, Nancy Oestreich Lurie.

Standing

LAPHAM RESEARCH MEDAL — Dr. S. A. Barrett, Chairman. H. W. Cornell, Dr. H. W. Kuhm, W. C. McKern, Charles Schoewe.

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WISCONSIN ARCHEOLOGICAL SOCIETY

Milwaukee, Wisconsin
Incorporated 1903

For the purpose of advancing the study and preservation of Wisconsin Indian Antiquities.

Meets every fourth Monday of the month at the Finney Neighborhood Library, Sherman and North Avenue, Milwaukee. (Except during July and August.)

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THE WISCONSIN ARCHEOLOGIST

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New Series

MILWAUKEE, WISCONSIN, MARCH, 1955

THE COLLECTOR'S CORNER is a new column in response to a mild clamor among members for a chatty section in the Archeologist devoted to the news and views of members and current happenings in archeology. This column can serve as contact between members for such things as archeological books or periodicals for sale, purchase, or exchange. We can announce collections for sale, and act as a clearing house for collectors who wish to exchange one type of specimen for another. We will include anything that will promote the cause of, or interest in, archeology. LET US HEAR FROM YOU.

MR. GEORGE FOX, pioneer member, now of Dowagiac, Michigan asks that anyone knowing the whereabouts of the Reno Emmonds collection contact him.

HAVE YOU SEEN the newly restored temple mound at Aztalan? Last summer the State Conservation Commission with supervision by the Wisconsin Archeological Survey (of which your Society is a member) rebuilt the northwest pyramidal mound . . . it looks fine. Both pyramidal mounds are now restored . . . next, the mighty problem of restoring the 4400 foot stockade that originally encircled the 21 acre village. If anyone out there has $100,000 you don't need . . . well anyhow that's about what it is going to cost to put up the logs and concrete facing.

WARREN WITTRY who has been doing some interesting

work excavating rock shelters gave us a talk on it at the January meeting and drew the largest crowd of the season.

DID YOU KNOW that our Society is the oldest state archeological society in existence? However, the largest one at present is THE MISSOURI ARCHEOLOGICAL SOCIETY with over 1,500 members. We have 320 members. Can't we do something about lessening the gap?

HAROLD HEMPEL, member from Fall River, stopped in at the Museum the other day to show us a huge Hopewellian chalcedony blade and a handsome birdstone from his collection. Got to talking about the relative absence of Indian mounds in his County (Columbia) . . . very few here, yet in surrounding counties they are numerous. Could it be because of the few lakes and rivers in this area?

WELCOME ABOARD. If any of these NEW MEMBERS are in your general area why not drop in and get acquainted?

KENNETH HOYT, 2542A N. Holton St., Milwaukee.
ROBERT JANSSEN, 5128 Indianola Ave., Minneapolis, Minn.
T|Sgt. G. L. HANDEGARD, 556 E. Main St., Sun Prairie.
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MISS ROSEMARY RENZ, 4719 W. North Ave, Milwaukee.
C. D. KALTENBACK, Potosi.
JOHN R. MILLER, Beaver Dam.

THE INDIANS IN WISCONSIN'S HISTORY, by John M. Douglass, is a recent publication of the Milwaukee Public Museum and very readable. It is the second in a series of which the first was PREHISTORIC INDIANS OF WISCONSIN by Robert Ritzenthaler. Both are priced at 60¢ and can be obtained by writing your editor.

THE LARGEST EFFIGY MOUND IN WISCONSIN, according to our dope, is the bird mound with a wingspread of 624

feet on the Mendota Hospital grounds near Madison . . . anyone want to argue?

Happy Hunting,
Bob Ritzenthaler, Editor
Public Museum,
Milwaukee 3.

SALVAGE OPERATIONS AT THE KOLTERMAN MOUND GROUP, DODGE COUNTY

Warren L. Wittry and Dr. E. G. Bruder

The largest number of otter mounds in a group is contained among the mounds on the August Kolterman farm in the Town of LeRoy, Dodge County, Wisconsin (NE¼, NE¼, Sec. 17, T13N, R16E). They are described and platted on a map in a recent issue of this journal (Bruder, 1953). Early in 1954, the U. S. Geodetic Survey located one of their bench marks at the northern end of this group, denoting that this is the highest elevation in the area. Views from this high vantage point, especially of the Horicon Marsh to the west, are unsurpassed.

An ancient Indian trail once passed by the western edge of this group. After the internal (sections) survey of 1836, the ancient trail was abandoned and a new town road located about 30 feet to the east. Years later, the remodeling of this road destroyed nearly all of mounds 16 and 20, and a part of mound 15. In mid-June, 1954, Dr. Bruder reported the impending destruction of additional mounds which would result from the further widening of the road, now known as County Trunk Z. Since new power lines, telephone poles, and fences were already in place on the west side of the road, the widening had to be made on the east side. The remaining parts of mounds 15, 16, 20, mounds 17 and 18 entirely, and a part of mound 12 were doomed.

This paper presents the results of salvage excavations and observations made literally in the shadow of the heavy earth moving equipment used in the highway remodeling. Time was so short that only mounds 17 and 18 could be carefully excavated. However, Dr. Bruder arranged to be on hand when the huge scraper finally confronted the mounds; and, through the

splendid assistance of the Dodge County Highway Commission, he was able to direct the cut of the scraper so that some additional features could be observed.

Mound 18, Otter Effigy

This mound was examined on June 23, 1954, by a crew consisting of Dr. Bruder, Dr. Robert Ritzenthaler, Robert Nero, and Warren Wittry. The extent of the trenching and the contents of the mound are shown in Fig. 1. In the region of the hip, what appeared to be the remains of a fire were found. It was an elliptical area (2.7 x 1.5 feet) of soil darkened by the presence of charcoal flecks. Its depth of 1.2 feet below the surface of the mound would place it approximately on the original land surface but there was no distinct line separating the mound fill from the old surface. The two could be differentiated, however, on the basis of consistency; the clay of the mound fill contained more silt than the clay underneath the mound. Two small pebbles were placed on the eastern boundary of the darkened area, but there was no indication that a place had been prepared for the fire, and their presence can be considered more or less accidental.

No special features were found in the head of the mound, only a smooth-surfaced, grit-tempered potsherd in the fill. In the throat of the effigy was a large glacial boulder which apparently had been partly exposed on the old land surface and covered when the mound was built.

The main feature of this mound was located in the heart region. An almost circular area, 1.7 feet in diameter, situated between 0.9 and 1.1 feet below the surface of the mound con-

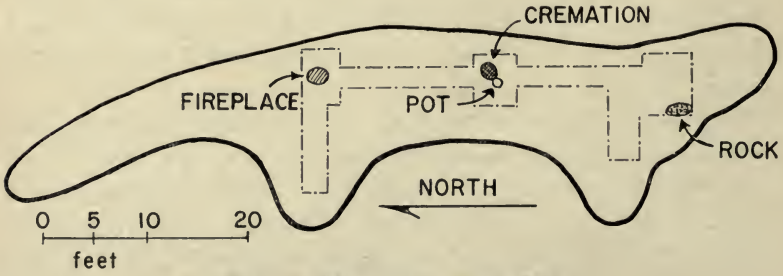


FIG. 1 Mound 18, otter effigy

tained the remains of a cremation. A total of 74 very small calcined bone fragments, less than 2 ounces in weight and representing a single adult individual, were recovered. The cremation also yielded a 7 ounce sample of charred wood. In direct association with the cremation were the sherds of a crushed pottery vessel and two chipped-stone projectile points. Apparently these artifacts had been placed next to the cremation either prior to the lighting of the fire or while it was still burning, for the side of the pot facing the fire showed greater evidence of fire and the tip and near edge of the quartzite point bear evidence of having been in contact with the fire. The relationships of the artifacts and the cremation are shown in Fig 2B. The dotted line indicates the extent of the cremation which had been mapped and removed prior to the taking of the picture, and the arrows point to two projectile points. The arrow at the left points to a quartzite point, 2⅞'' in length, also shown in Fig. 2D. The arrow at the right points to a white chert point, 1 3/16'' in length, Fig. 2E. A small chert flake (Fig. 2C), the edges of which are secondarily chipped, probably as a result of use, was included in the mound fill 1 foot north of the pot.

The restored vessel, illustrated in Fig. 2A, falls well within the type defined by Dr. Baerreis as **Madison Cord Impressed** (1953). It is decorated with four horizontal single cord impressions in a ¾'' band around the neck. Below this band is a series of punctations made with the end of a small round stick held diagonally to the surface. The lip is smoothed and bears numerous thin incised lines: some are aligned with a radius of the pot, others slant either to the right or left of this. Vertical cord impressions, ¾ inch in length, appear on the interior surface of the rim. All of the cord impressions, including those produced by the cord-wrapped paddle on the entire outer surface, were made with a doubled, double strand cord having a clockwise spiral. The tempering material is composed of small pieces of grit and there are strong indications that the pot was constructed by the coiling technique. The thickest parts (¼'') of the vessel wall are on the bottom and around the rim: the shoulder is the thinnest (5/32''). The pot stands 7¼'' high, has an average shoulder diameter of 8 7/16'', and

a rim diameter of 6½". In liquid measure, it contains a little over a gallon.

As the power scraper removed this mound, Dr. Bruder collected the fragments of a pottery rim from the mound fill, approximately 1 foot southwest of the locus of the complete pot. These have been put togeher and the section and its profile illustrated in Fig. 2F. Although this sherd is decorated somewhat differently, it too can probably be placed in the Madison Cord Impressed type. It represents a larger vessel, about 10 inches high, and the cords used on the paddle and on the in-

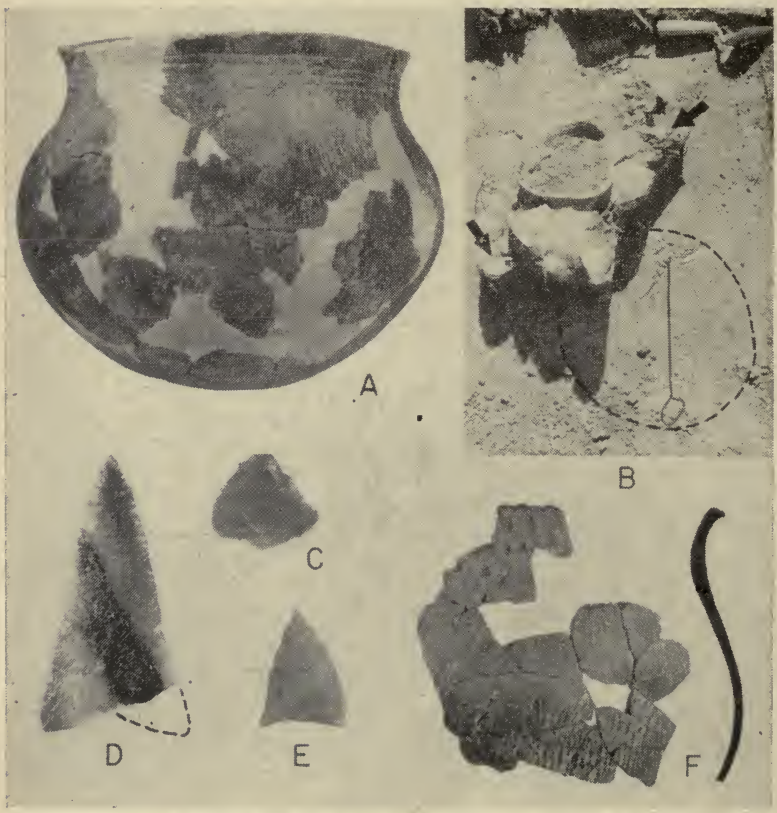


FIG. 2. Contents of Mound 18. A, pottery vessel, restored; B, pottery vessel and chipped-stone projectile points IN SITU, dotted line shows areal extent of the cremation; C, chert flake; D, quartzite point; E, chert point; F, rimsherd and profile. Scale: A, F, ¼ natural size; C, D, E, ½ natural size.

terior rim were of a larger diameter. The neck has a double row of knot impressions instead of the band of single cord impressions. The decoration on the lip and inner rim is similar to that of the vessel found with the cremation.

Mound 17, Otter Effigy

The excavation of this mound was undertaken on June 30th by Robert Hall, Robert Maher, Robert Nero, Archie Mossman, Dr. Bruder and Warren Wittry. The mound was trenched in a manner similar to Mound 18, and the regions of the head, shoulders, heart, and hip more carefully searched for features. Only two features were found; both were located in the heart of the effigy. One was a primary burial in a pit below the mound floor, and the other was a cremation placed in the fill of the mound.

The pit for the flesh burial was well defined at a depth of 1.2 feet below the mound surface. Again, no distinct line of the old sod could be found. The pit was rectanguloid in outline, with rounded corners, 4.3 feet long in a northeast-southwest direction and 2.3 feet wide. The head of the individual, an adult male, was at the southwest end of the pit, but because the skeleton was very badly decomposed, the exact position of the body was not clear. Only the skull and the bones of the legs could be exposed to view (see Fig. 3). The position of the

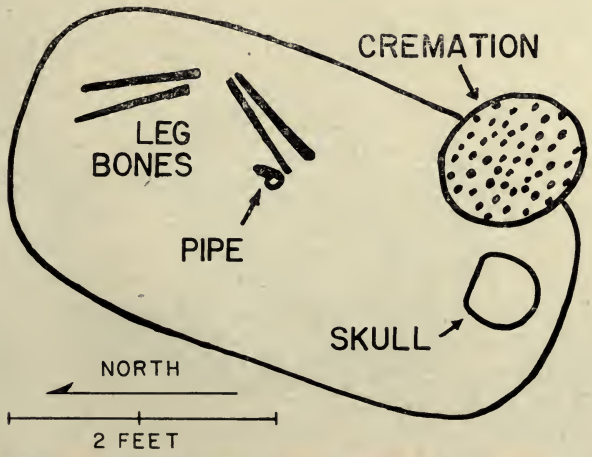


FIG. 3. Features in the heart region of Mound 17, otter effigy.

skull was face-downward and the legs were slightly flexed. The burial was either in a semi-flexed position on its right side (the skull having been twisted around so the face was down), or in the prone position with a partial flexing of the legs. No bones of the torso were found. Possibly this area had been cleaned out by rodents, though it seems more likely that these bones had just disintegrated beyond recognition.

The occipital bone of the skull is flattened in a manner suggestive of deformation caused by contact with a hard cradle board during infancy (Fig. 4). This occurance is noteworthy since almost all crania found in effigy mounds exhibit no deformation of the occiput whatsoever. Of the dozens of crania found by McKern in burials of the Effigy Mound culture, only one showed similar indications of artificial occipital flattening. (McKern, 1930, p. 452, Plate LXIV, 2).

Situated just to the right of the thigh bones was the only non-perishable artifact placed with the burial, a fragmentary pottery pipe. If perishable materials had been placed in the

FIG. 4. Skull of sub-floor pit burial in Mound 17.

pit, no trace of them was found by us. From the pieces remaining (Fig. 5), the pipe appears to be of the elbow variety, typical of the Effigy Mound culture. The clay used in making the pipe is sparsely tempered with sand. The surfaces of both the bowl and the stem bear an incised design which was applied in the following manner: While the clay was still soft, knot impressions were applied diagonally on the bowl and along the stem, then a sharp instrument was used to incise lines along each side of the knot impressions. The appearance of the design resembles a ladder with the knot impressions as rungs and the incised lines as the sides.

The cremation, the second burial in this mound, was contained in an area about 1 foot in diameter and was placed at a depth of between 0.5 and 0.8 foot below the mound surface. Placed over the southeast corner of the burial pit, it is obvious that the sub-floor burial pit had been filled with earth, and mound construction started before the cremation was placed in the mound. About 50 extremely small fragments of calcined bone, weighing less than an ounce were collected. The size of a portion of a finger or toe bone indicates that this individual was an infant or very small child.

Notes on Mounds 15 and 16

So much of mound 16 had been disturbed by the first remodeling of the road that its orignal appearance could not be determined when the group was mapped in 1951. Dr. Bruder is of the opinion that it was an otter effigy. The scraper, in

FIG. 5. Fragments of pottery pipe found with sub-floor burial in Mound 17.

passing over mounds 15 and 16, exposed small pits filled with charcoal and decomposed bones located in the approximate center of each mound. Possibly, these were cremations, but since none of the bone fragments were saved, the identification can not be definitely made. The scraper also uncovered two additional interesting facts. Each of these mounds contained a large glacial boulder and from all indications these were also in place on the old surface and the mounds built around and over them, as was the case in mound 18.

After the mounds were scraped away and the subsoil exposed, it was noticed that there was a rather large pit placed directly in front (south) of each of the otter mounds (nos. 15-18). The pits varied from 3 to 5 feet in length and were about 2½ feet wide. They contained almost completely decomposed fragments of bone which appeared as gray discolorations against the black fill of the pit. Chert flakes, parts of hammerstones, and fragments of pottery were dispersed in the pits.

No pits or other features were noticed during the bulldozing of the west end of linear mound 12, or the removal of the remaining part of mound 20. The latter, Dr. Bruder suggests, is the head of an otter, but because so much of the mound had been removed prior to the mapping, there can be no positive designation.

Conclusions

The Kolterman mound group originally contained 22 mounds. Five, and a portion of a sixth mound, have been destroyed by the building of the road and its subsequent remodeling. The northernmost mound, a conical, has been totally destroyed by cultivation. The mounds now remaining are in permanent pasture and there seems to be little danger of their being damaged in the near future. The information obtained through the excavation of two of the otter mounds and by observation as the huge scraper erased the last traces of the westernmost mounds in the group should not be interpreted as being representative of the entire group. There is a great likelihood, however, that most, if not all, of the mounds are of the Effigy Mound culture, as is certainly the case with the two excavated otter effigies.

The evidence at hand shows a considerable consistency in

the construction of four otter mounds of this group. Two of them definitely, and two probably, contained a cremation in the region of the heart, and all four mounds had associated with it a large pit filled with refuse. The occurence of these pits, each in the same relative position to an otter mound, suggests that there is a direct association between them and the mounds. In the realm of utter speculation, it may be that they contained offerings of food for the "otters" as they bore the deceased on the journey to the Happy Hunting Ground. At least, their presence might be looked for when effigy mounds are inivestigated in the future.

In the two mounds excavated, it appeared that the floor had been prepared to the extent of removing the sod before constructing the mound. The cremations found in these two mounds appear to have been similarly made—the calcined bone fragments showing characteristic evidences of the burning of either dissected bodies or "green" bones rather than dry bones. (cf. Baby, 1954).

It is tempting to interpret the evidence as indicating that this is a late manifestation of the Effigy Mound culture. The well rounded bottom of the pottery vessel, the basic triangular shape of the chipped-stone points from Mound 18, and the occipital flattening of the mound 17 skull may indicate Mississippi cultural influences. On the other hand, some "fine-ware" pots of the Hopewell culture (Middle Woodland Period) have rounded bottoms, and some Hopewell skulls show cradleboard deformation, so these traits are not necessarily late ones. Perhaps the charcoal from the Mound 18 cremation, through a radiocarbon test, will provide the necessary enlightenment on the age of the mounds.

REFERENCES CITED

BABY, RAYMOND S.

1954. Hopewell Cremation Practices. **Papers in Archaeology** No. 1. The Ohio Historical Society, Columbus.

BAERREIS, DAVID A.

1953. Blackhawk Village Site (Da5), Dane County, Wisconsin. **Journal of the Iowa Archeological Society,** Vol. 2, No. 4, pp. 5-20. McGregor.

BRUDER, DR. E. G.

1953. Archeological Remains in Northeastern Dodge County.

The Wisconsin Archeologist, n. s., Vol. 34, No. 4, pp. 181-206. Milwaukee.

McKERN, W. C.
1930. The Kletzien and Nitschke Mound Groups. **Bulletin of the Public Museum of the City of Milwaukee,** Vol. 3, No. 4.

PREHISTORIC EARTHWORKS IN DEVILS LAKE STATE PARK

Dr. E. G. Bruder and Ralph Tuttle

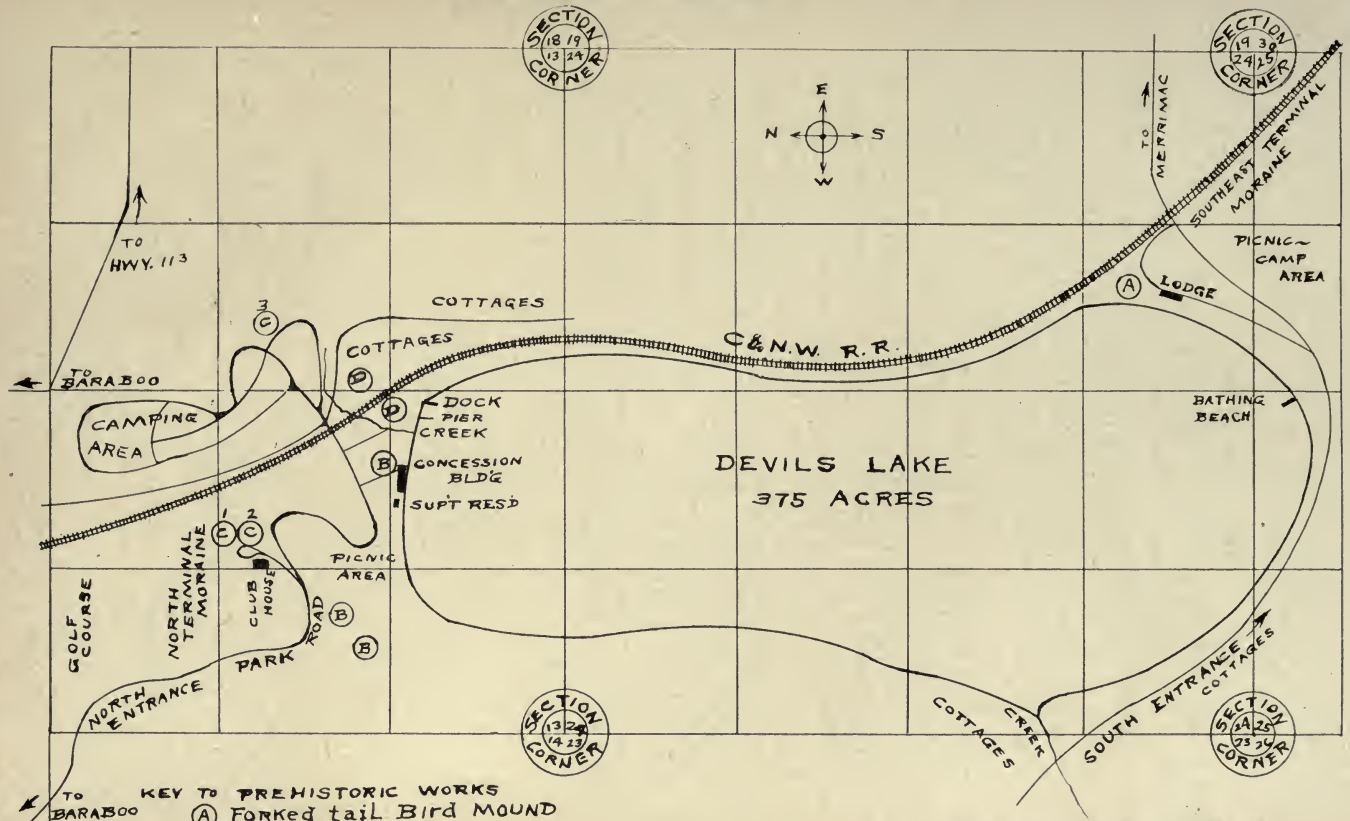
Introductory

The many interesting prehistoric works in this 2538 acre park have been mentioned several times in the "Wisconsin Archeologist" and other publications, but only two effigy mounds have been described in detail.

The bird effigy on the shore near the southeast part of the lake was surveyed by William Canfield in 1875 and described by Charles Brown and Karyl Chipman, in Vol. 15, No. 1, New Series, July 1935, of the Wisconsin Archeologist.

The other mound, a lynx effigy on the east crest of the northern terminal moraine, was surveyed in April 1905 by Dr. A. B. Stout, and described by H. E. Cole in Vol. 20, No. 3, Old Series, July 1921 of the Wisconsin Archeologist. The 1953 survey is at slight variance with that of the original survey. Most of the remaining works have been described only in a very casual manner. Three conicals and two linears were not mentioned. All of these earthworks, with the exception of the bird effigy, are located on the crest of the northern terminal moraine and its outwash plain, of the Green Bay lobe of the Lake Michigan glacier (Fig. 1). The bird effigy is located on the southeast shore of the lake on the outwash plain of a southern lobe of the same glacier. No earthworks were found in the hard crystalline rock of the non-glaciated area, immediately to the east and west border of the outwash plains. The prehistoric people confined their energies to much easier worked glaciated soil. The park officials have made every effort to restore and preserve these fine prehistoric works, which are located in Sauk County, Wisconsin, Town of Baraboo, T 11-12

DEVILS LAKE STATE PARK
PREHISTORIC WORKS



KEY TO PREHISTORIC WORKS

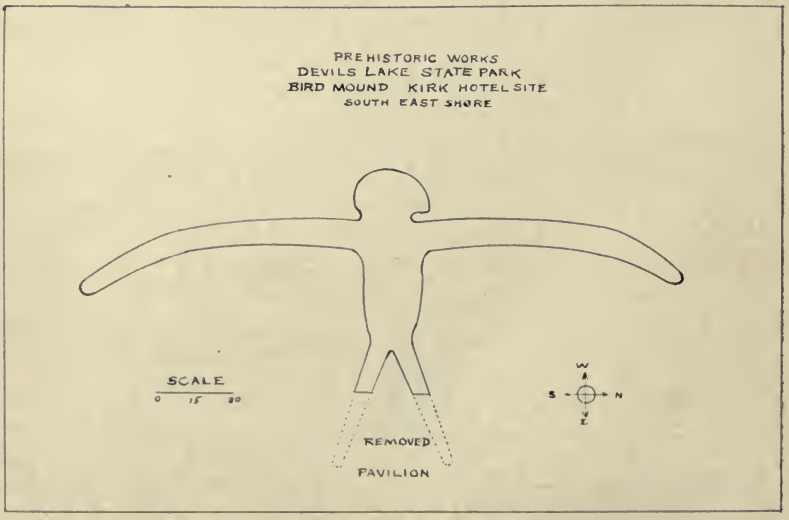
- (A) Forked tail Bird MOUND
- (B) CLAUDE GROUP
- (C) LYNX GROUP, No 1 LYNX, No 2 OVAL, No 3 LINEAR
- (D) EAST GROUP

U.S. DEPT. OF THE INTERIOR
NATIONAL PARK SERVICE MAP
REDRAWN TO SCALE 1" = 1000 ft
0 500 1000 IN FEET
DR. E.G. BRUDER 1953

N, R 6 E, in the south ½ of Section 13, and in the S. W. ¼ of the S. E. ¼ of Section 24.

The Bird Mound

This fine forked-tail bird effigy (Fig. 2) is located on the southeast shore of the lake, near the site of the former Kirk Hotel. In the building of this hotel the left wing, and thirty feet of the split tail of the bird mound were destroyed. This wing has been restored by the park officials, with the help of the splendid survey made of this mound by William Canfield, pioneer surveyor and archeologist of Baraboo, in 1875. At that time its overall body length was 115 feet, but the destruction of part of the tail has reduced this figure to 85 feet at present. The overall wing spread is 240 feet, exactly that of the original survey by Canfield in 1875. All outlines remain sharply defined. The bronze plaque placed on the center of the body near the head in 1916 resulted in deep erosion due to people ascending the mound to read the inscription. The height of the tail is 22 inches near the body and 12 inches at the tips. The height of the body to the rear of the wings is 40 inches. The height of the right wing is 20 inches near the body, 18 inches at the center and 12 inches at the tip. The wings are straight away, at right angles to the body from its center for



a distance of 61 feet, then recurve gracefully towards the body, forming a 20° segment 55 feet long to the extreme tips of the wings, a very fine monument of the prehistoric architect's creative ability. It resembles the eagle type effigy, with an unusually well preserved head in distinctive outline. The effigy bears due west to the lake a short distance away.

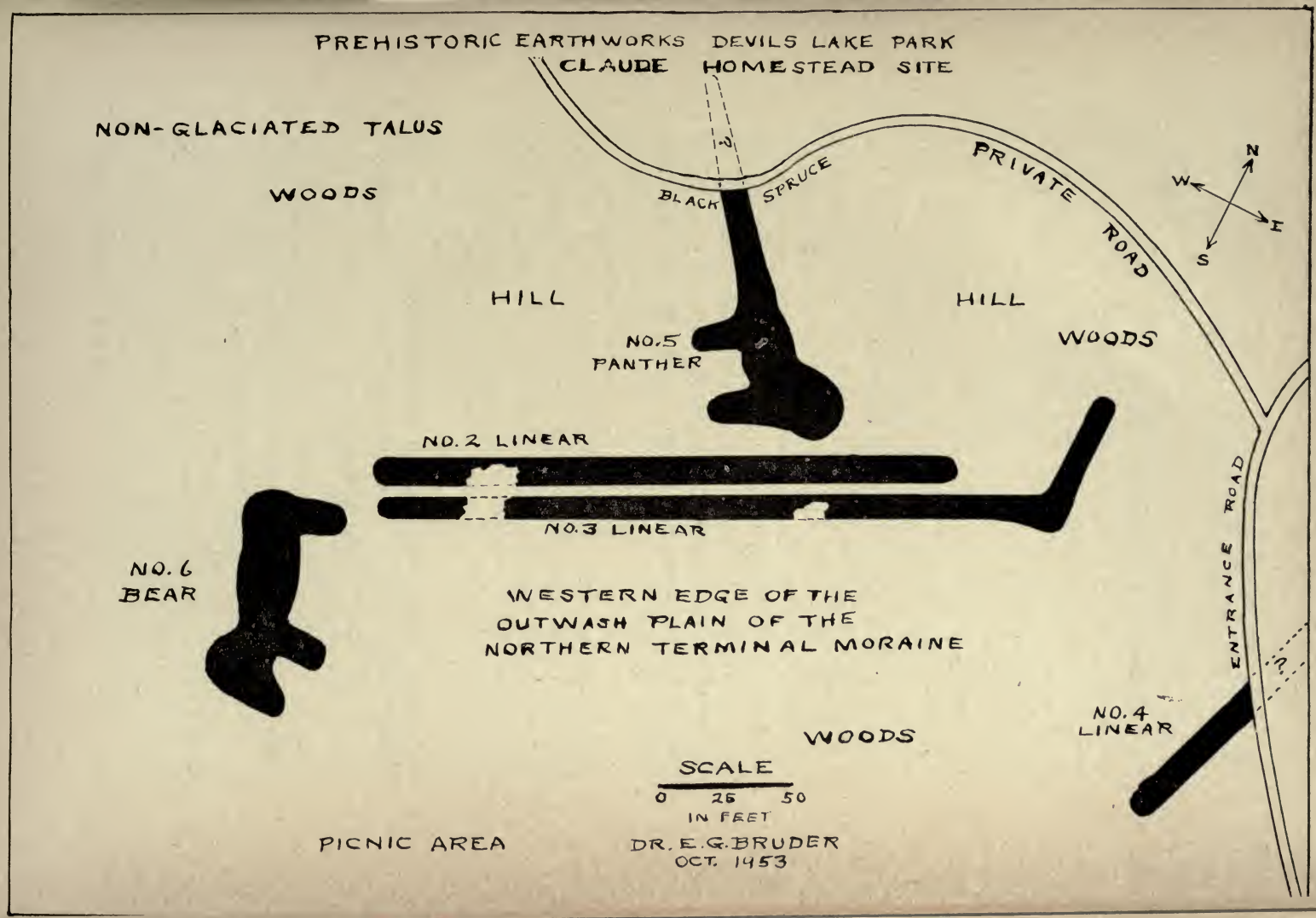
The Claude Group

These mounds (Fig. 3) are located on the western edge of the northern outwash plain, at the base of the slope below the historic Claude home.

Mound number 1 is a linear 101 feet long, 14 feet wide and 30 inches high. About 4 feet have been removed from its west end by a park road. Several large oak trees are growing in this mound, which bears N. 82° E. m. g. Its western extremity bears N. 7° W to the southwest corner of the Administration Building 152 feet away.

Mound 4 is another linear located at the turn of the Warner Memorial Road, the west entrance to the Park. The linear bears N. 20° E. m. g., but only 67 feet are intact, the remaining unknown length to the north having been covered by road fill. The mound is 10 feet wide and 28 inches high, with four white oak trees growing on its center. It is 96 feet away and bearing N. 60° W. to the north bend of No. 2 linear, which is at the foot of the west slope. Number 2 linear has a length of 223 feet, a width of 12½ feet, and a height of 26 inches. It is only 2 feet away from Number 3 linear, throughout the entire length. Number 3 linear is located to the east of Number 2, extending N. 66 E for 255 feet, then due north for another 42 feet. At this bend, its width is extended 3½ feet. Both linears are 12½ feet wide, and 26 inches high. A considerable amount of soil has been removed from both mounds, near their south part, and from the center of Number 3 linear. Both mounds bear N. 66° E. The bend of No. 3 linear bears N. 46° E. to a telephone post, 68 feet away, located on the side of the park road. Heavy brush covers the northern part of the mounds, holding the erosion to a minimum.

Mound 6 is a well-proportioned bear effigy, with its hind feet 21 feet away from the south end of Number 3 linear. Its


PREHISTORIC EARTHWORKS DEVILS LAKE PARK
CLAUDE HOMESTEAD SITE
NON-GLACIATED TALUS
WOODS
BLACK SPRUCE
PRIVATE ROAD
N
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WOODS
NO.5
PANTHER
NO.2 LINEAR
NO.3 LINEAR
NO.6
BEAR
WESTERN EDGE OF THE
OUTWASH PLAIN OF THE
NORTHERN TERMINAL MORAINE
ENTRANCE ROAD
NO.4
LINEAR
WOODS
SCALE
0 25 50
IN FEET
PICNIC AREA
DR. E.G. BRUDER
OCT. 1953

long axis bears N. 17° W. The overall length is 74 feet and the height of its body is 3 feet. The front leg is 18 inches in height, the rear leg 22 inches, and the head 24 inches. The front leg is 12 feet long and the rear leg is 13 feet long. The head measures 39 feet in length from its top to the tip of the front leg. The width of the body immediately in back of the front legs is 17.2 feet, in the center 18.6 feet, and in front of the rear legs, it is 20.6 feet wide. It has been skillfully restored by the park directors. A former foot path crossing the center of the body resulted in considerable erosion.

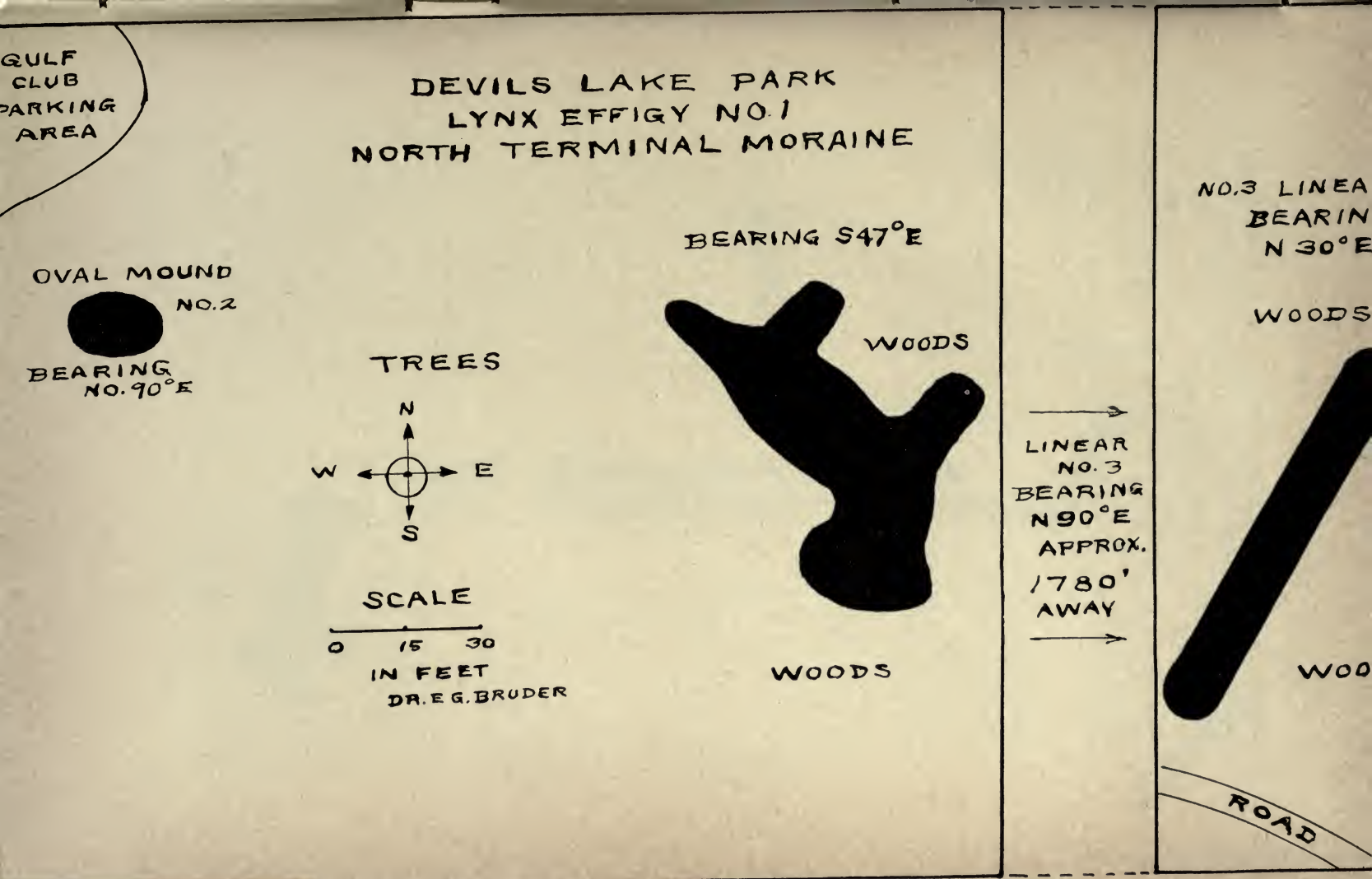
Mound 5 is a panther type effigy, to the west center of linear mounds Numbers 2 and 3, and bearing N. 40° W. with its head toward the linears. Its tail extends up the slope to the edge of the Claude road and the remainder of the tail has been destroyed by road building. The panther is 89 feet long, measured from the edge of the road to the outside part of the head. The tail is 7.8 feet wide at the road, 9.9 feet wide in the center, and 12 feet wide near the body. It's average height is 26 inches. The rear leg is 26 feet long, and the front leg measures 25.9 feet. The distance from the top of the head to the tip of its front leg is 49 feet. Except for the obliterated end of the tail, it is a fine panther type effigy. The rugged talus of the non-glaciated area is only a few feet away from this pre-historic monument, which is located on the extreme western edge of the outwash plain.

The sharply contrasting geological formations found here influenced the prehistoric architects to confine their work to the glaciated soil. Miss Claude recognized the works as prehistoric, and allowed rambling blackberry bushes to completely cover them, creating a protective barrier against relic hunters. The park staff spent many days clearing the field to permit this survey to be completed.

Fourteen black spruce, 40 inches in diameter, line the Claude road to the west of the mounds. They were planted over 100 years ago, and are not native to the park.

The Lynx Group

Three mounds constitute this group, an oval, a linear, and a lynx effigy (Fig. 4). Mound 2, an oval, is located 59 feet to


GULF
CLUB
PARKING
AREA
DEVILS LAKE PARK
LYNX EFFIGY NO. 1
NORTH TERMINAL MORAINE
BEARING S47°E
OVAL MOUND
NO. 2
BEARING
NO. 90°E
TREES
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DR. E G. BRUDER
WOODS
WOODS
LINEAR
NO. 3
BEARING
N 90°E
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1780'
AWAY
NO. 3 LINEA
BEARIN
N 30°E
WOODS
WOO
ROAD

the south of the parking place to the southeast of the Golf Club pavilion. Its long axis bears due west, and it is 19 feet long, 15 feet wide, 20 inches high, and has never been disturbed.

Mound 3 is a linear, located on the south slope of the eastern crest of the terminal moraine to the east of the Chicago & Northwestern Railroad. It bears N. 30° E. m. g. with a length of 90 feet, a width of 12 feet, and a height of 30 inches. The adjoining camp ground road curves around its south end. White oaks dominate the locality.

Mound 1, a lynx effigy, is located on the center of the crest of the terminal moraine, in a grove of trees, with many beautiful views in all directions. The effigy bears S. 47 E., and is 149 feet away from the eastern edge of the parking area. This rare type of effigy mound is well preserved, and has never been opened. It was surveyed in 1905 by Dr. A. B. Stout, a Baraboo archeologist. The mound bears S 47° E, through its long axis, which is 67 feet long. The distance from the top of its head to the tip of its front leg is 55 feet. From the top of its back to the tip of the rear leg the distance is 29½ feet. The effigy is 38 inches high in the front part, tapering down to 16 inches at its tail. The park staff has placed a continuous line of stones around its outside edge to protect its well defined outline.

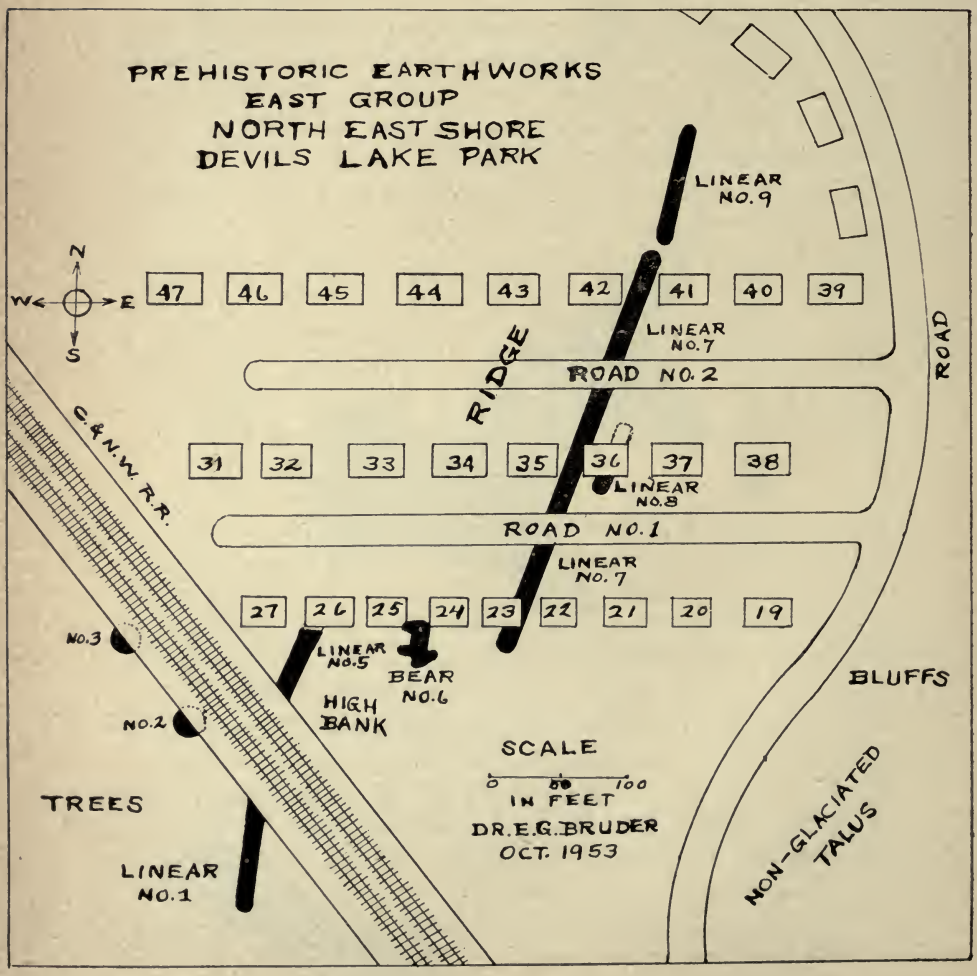
East Group

This fine group of prehistoric earthworks (Fig. 5), has been bisected by the double track road bed, of the Chicago & Northwestern Railroad, and also is partly covered by the rows of cottages located east of the tracks. The group consists of 2 conicals, a bear effigy, and 4 linears. The 2 conicals and a linear are located to the west of the tracks, which removed parts of these mounds. The north end of Mound Number 1, a linear, was used as Station A. The bearing of this mound is S. 15° E. It has an average width of 13.6 feet throughout its remaining length of 78 feet, a considerable part having been cut away by the railroad. Its height is 28 inches. A park sign is located 8 feet from its south end.

Mound 2 is a conical, 18 feet in diameter, and 28 inches high, and 64 feet away from Station A. The east half has been re-

moved by the railroad bed. Number 3 mound, another conical, is located 84 feet away from Number 2. It is 20 feet in diameter, and 28 inches high. About one-third has been removed from its eastern edge by the railroad construction. Both conicals bear N. 40° W. from Station A.

Diagonally across the double tracks from Station A, bearing N. 22° E, 90 feet away, is the present south terminus of Mound 5, a linear which formerly extended southward across the right



of way. Additional mutilation to its northern extremity was caused by the construction of Cottage No. 26. The present north terminus of this linear was used as Station B. The remnant of the mound is 36 inches high, 15½ feet wide and 56 feet long. It bears S. 22° W. to Station A across the tracks. The park sign on the southern end of linear Number 1, bears S. 18° W., denoting a 7° difference in alignment of linears 1 and 2.

Mound 6, a very fine bear effigy, bears S. 60° E. from Station B which is 78 feet from the tip of the front leg. The bear is 51 feet long, 30 inches high, and 37 feet from the top of its head to the tip of its front leg. The distance from the top of its back to the tip of its rear leg measures 19 feet. The distance between the legs near the body measures 17½ feet, and the distance between the tips of both legs is 35 feet. The effigy bears N. 10° E. Station C, located on the south end of Mound Number 7, a linear, bears N. 80° E. and is 55 feet from the tip of the ear of the bear.

Mound 7 has been described as 3 separate linears. It formerly was one continuous mound 303½ feet in length, with both ends remaining well defined. The width of the three segments remain at 12½ feet, with a height of 30 inches. The measuring and orientation of this cut-up linear proved to be a very trying task. The first segment, 136 feet long extends from Station C, across the lawn, then under the southeast corner of Cottage Number 23, continuing between Cottage 23, and 22, then passing under the shed at the northwest corner of Cottage 22 to the north where it is bisected by Road No. 1. From here it continues at the same angle, N. 20° E., across the lawn to the south of cottages Numbers 35 and 36, just missing the southeast corner of Number 35, 14½ feet away, and passing between the two cottages, and under the northwest corner of Cottage Number 36. A huge maple, 33 inches in diameter, is growing on the center of the mound between the two cottages. Thirty-three feet due east is Mound 8, a linear 62 feet long, 9 feet wide and 26 inches high. It passes directly under the east half of Cottage Number 36, and projects beyond its north and south walls bearing N. 22 E. The north part beyond the cottage is partly destroyed. Mound 7 continues beyond the

northwest corner of Cottage Number 36 for another 64 feet to its bisection by Road No. 2, from where it passes unobstructed for 89 feet between Cottages Number 42 and 41 to its original terminus 8 feet beyond to the north.

Twenty-five feet away is the southern edge of Mound 9, a linear 67 feet long, 14 feet wide, 30 inches high, and bearing N. 18° E. It remains undisturbed. With the exception of the earthworks destroyed by the railroad right of way, the remaining mounds can easily be restored.

We are grateful for maps and help by Mr. Ralph Halverson, Supervisor of Devils Lake State Park, and the survey assistance rendered by James Halsted of Baraboo.

A NATIVE COPPER HARPOON POINT

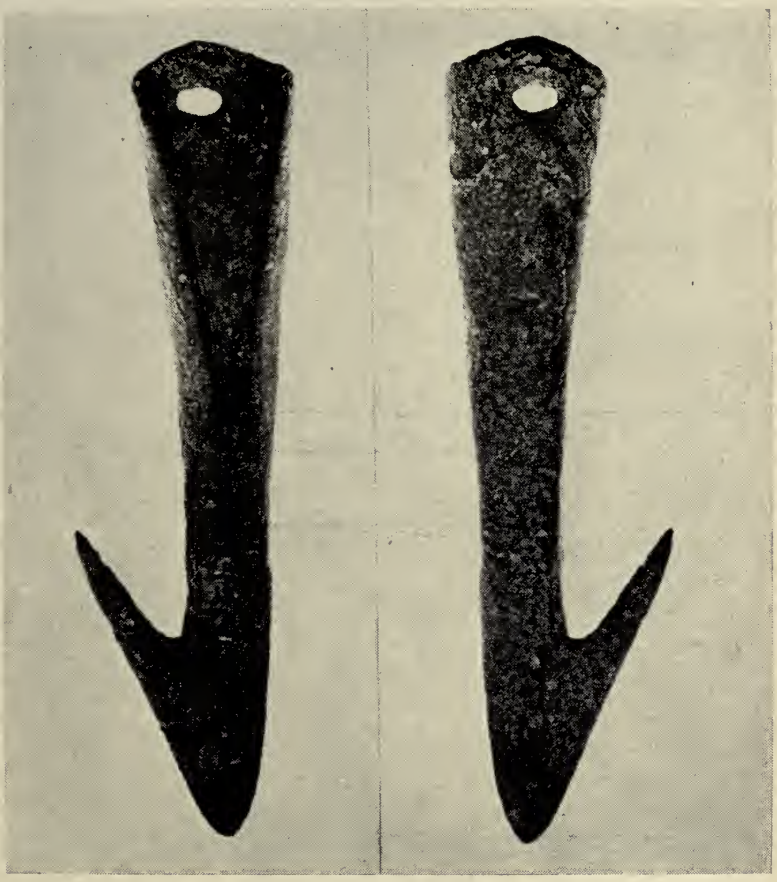
By Phil Wiegand

On August 13th, 1949 a comparatively rare type of native-copper harpoon point was found by Mr. Lowell D. Hunter on the northeast shore of Fence Lake in the southwest part of Vilas County. The point was found on the surface of the soil, about 100 feet from the lake shore, and approximately fifteen feet above the lake level.

The point is of the socketed type, with a flat, pointed blade, one edge of which is provided with a sharp-pointed barb. The length is 4½ inches with the barb extended at an angle two inches from the tip of the blade. A rivet hole, ¼ inches in diameter is in the socket near the base.

Such harpoon points are usually considered to have been used as fish spears. Whether it was intended as a toggle-type of harpoon point which was attached to a cord and the shaft withdrawn after striking, or whether the point was fixed permanently to the wooden shaft with a copper rivet, is debatable.

The patination and typology indicates that the point is an artifact of the Old Copper Culture which flourished some 5-7000 years ago in Wisconsin. Similar specimens have been



found at Two Rivers and other localities in Wisconsin, and also in Ontario and New York State.

REFERENCES:

BROWN, CHARLES E. Native Copper Implements of Wisconsin. Wisconsin Archeologist Vol. 3, No. 2 (Old Series) 1904.

BROWN, CHARLES E. Native Copper Harpoon Points. Wisconsin Archeologist Vol. 7, No. 1 (New Series) 1927

WITTRY, WARREN L. A preliminary Study of the Old Copper Complex. Wisconsin Archeologist Vol. 32, No. 1 (New Series) 1951.

RITZENTHALER, ROBERT. A comment on the Carbon 14 Dates for Old Copper. Wisconsin Archeologist. Vol. 35, No. 4 (New Series) 1954.

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THE WISCONSIN ARCHEOLOGIST

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THE RINGEISEN COLLECTION OF FLUTED AXES

W. C. McKern

Of all the varieties of archeological specimens reported from Wisconsin, the most locally native and characteristic object is the fluted ax, a practically unique form occurring only in Wisconsin or, excepting in very rare instances, just across the line in adjoining states. This ax is a true native of Wisconsin.

You may see examples of this ancient tool in collections—one here, several there, and a dozen or more together in a few instances, but it is one of the exceptionally rare types of archeological objects from in or out of the state, particularly in its best style and tradition. Actually, there is just one comprehensive collection of fluted axes in the world, and that is in the possession of Joseph Ringeisen, Jr., a resident of Milwaukee and an active member of the Wisconsin Archeological Society these many years. Those familiar with his specimens will concede that the Ringeisen Collection is **the** collection of fluted axes. No other will bear comparison.

The fluted ax is a phenomenon which has never been satisfactorily explained. In basic form it is a grooved stone ax, embracing several shapes usual to the Woodland area. It may be long or short shafted; rounded or rectilinear in horizontal cross section; side-grooved, three quarter grooved or fully grooved; with horizontal or diagonal grooves; with or without face beveling; roughly executed or finished with artistic taste and consummate skill.

The size of the fluted ax would appear to be of no significance, since the range in size parallels the general range for grooved axes. The largest ax in the Ringeisen Collection is 12 inches in length and weighs 14 pounds 9¼ ounces, whereas the two smallest speciments are 3½ and 3⅝ inches long, and weigh 9¾ ounces and 9 ounces, respectively. The remaining axes range widely between the two extremes.

The peculiarity which makes this type of artifact a fluted ax is the presence of broad channels worked into the surface, having the appearance of flutes, especially when they are arranged in closely parallel sequence. They may be shallow and poorly defined, requiring careful scrutiny to be detected; or they may be bold and sharply outlined. Nor is there any consistency in their disposition, although the most common arrangement is that of a series of closely parallel flutes disposed lengthwise on the ax, occurring on one or both faces of the blade section. But the flutes may be few or many; may be disposed laterally, diagonally, or to form simple geometric patterns; may be straight or curvilinear; and may be located variously on the blade or on the poll.

In extremely rare instances flutes are found on some implement other than a grooved ax, such as a grooveless ax, adze, gouge, or "spud," but these usually are so rare as to be individually unique, and have been found for the most part on the outer margins of the area of concentrated distribution for fluted axes.

Although the specimens in the Ringeisen Collection vary as to materials used in their manufacture, they are all of hard igneous rock. Any tough, close-grained variety might be employed, with granitic rocks predominating. There is nothing to indicate a more specific selection of materials.

When you see a fluted ax, whether on the first or the last occasion, you ask the question, "Why?" A great deal of additional work must have been required to equip these tools with their characteristic marks of identity. To what purpose? Several suggestions have been proposed as answers to this intriguing question, none of them wholly satisfactory.

The ax is a utilitarian implement, and some have presented arguments in support of some use advantage which the flutes might provide. Lengthwise parallel grooves on the face of the blade might serve to prevent binding when an ax was used for splitting wood. However, judging from the known practices of our Indians, wood was split by means of wedges rather than with stone axes. Moreover, this purpose fails to explain the flutes which are placed diagonally, horizontally, in con-

centric circles, or to form geometric designs and even on the poll of the ax.

Actually, this variety of shape, arrangement, and location characterizing the flutes just about eliminates all arguments for utilitarian purposes of any kind.

The next explanation which comes to mind is one of ornamentation. Were these flutes provided just to satisfy the esthetic taste of the culture, or even of the individual maker? The limited, local distribution of the fluted ax suggests that it represents the concept of a geographically limited, local people; that it was the nature of a group concept, the product of the culture traits of some definite group of prehistoric Indians, rather than wholly dictated by individual taste. Of course, some men were better artisans than others, and their products would be superior, which might explain the difference in degree of skilled workmanship so apparent in a collection of fluted axes. This also could explain the variety and treatment as depending upon the artistic taste and imagination by individual craftsmen.

Another attempt to explain the fluted ax is based upon the observation that a logical method of shaping a stone with such crude tools as a hammerstone would be to hammer out parallel grooves and then break out the intervening ridges. Thus, the fluted axes would be unfinished implements, or implements on which the final polishing has failed to eradicate all the evidence of the grooves so produced.

In instances, by selecting certain of the axes and leaving all the others out of consideration, this explanation can be made to appear quite reasonable. But when the total of specimens in the Ringeisen Collection are examined, the "unfinished" explanation fails to explain the limited, selective distribution of flutes on various parts of the axes, and the common arrangement of flutes to create definite, pleasing patterns. Moreover, although many collections contain quantities of unfinished axes and related stone tools, none of these unfinished implements shows any evidence of fluting.

The position in favor of ornamentation as the motive for the flutes would appear to be rather strong at first glance, but at least two objections to this explanation have been raised. First,

since the axes in every other respect appear to be common, practical tools, why would all the required effort and time be expended to decorate them? Of course, the Indians were not always practical, according to our definition of the word, and the time required to do a thing did not have nearly the importance that it has in our own society. Common Indian tools such as soup spoons, mush stirrers, stone pestles, and the like were often intricately decorated.

Second, the objection is raised that the scarcity of fluted axes suggests that this implement never was a common tool; that it may very well have had a specialized use—possibly a ceremonial use; and that, consequently, the fluted designs may be symbolical, or may in some other way reflect their non-utilitarian use.

These are the suggestions, with the controversial pros and cons, which have come to our attention. You may select your own interpretation. Or have you another, new explanation which inadvertantly has escaped our notice? At the moment there is no authority from whom you may obtain an incontrovertible answer. You have all the privileges of free Americans to do your own guessing, and with an easy conscience.

The fluted ax exists and was made, purposefully, by some group of early Wisconsinites. By whom? It was previously suggested that this object reflects a group concept; that it is a cultural manifestation. What people or what culture does it represent? We know of but one theory which is supported by at least some facts. Another peculiarly Wisconsin product is the effigy mound. It, too, is found exclusively in this state or immediately across the borders in adjoining states. Its distribution is slightly more restricted than that of the fluted ax, if we include axes found as far away as in Ohio; but the ax is more easily separted from its original location and carried afield than is the effigy mound. We know, as a result of extensive excavations and laboratory studies, that the effigy mounds were constructed by a people representing a single cultural group, which has been called the Effigy Mound Culture. We know that these effigy mound builders possessed a Woodland type of culture in which the various types of grooved axes represented in the fluted ax series were common-

ly employed. The occurence of the fluted ax and the effigy mound in the same limited, local area, suggests, therefore, that the two were products of the same cultural people. The arguments in support of this theory will become stronger when a fluted ax, or better, several fluted axes, are found in definite association with burials or other inclusive features in effigy mounds.

In these days of Carbon-14 dates which determine the presence of man in Wisconsin in the vicinity of 5000 B. C., it becomes of increasing interest to consider the question, "When?" The fluted axes are, in general, of Woodland type and logically belong somewhere in that rather long period of Woodland Culture in our state. This period starts at the end of the Archaic period and endures into the historic period, when it is represented by such tribes as the Menomini and certain divisions of the Dakota Sioux. At its earliest, it represents a middle era following the early prehistoric and preceding the late prehistoric eras. If the fluted ax is to be culturally associated with the effigy mounds, it probably was made and used at some period during this middle era; our suggestion would be from one thousand to two thousand years ago. The time could be somewhat more recent, and it could be earlier.

The distribution of the 83 specimens in the Ringeisen Collection, which is believed to be fairly representative, shows a marked concentration in the southeastern quarter of Wisconsin (Fig. 1). Dodge and Jefferson counties lead the parade, with Calumet, Washington, and Waukesha counties following in close order. One lone specimen comes from Marinette County, but no others are encountered until, proceeding southward, one crosses an east-west line determined by the northern boundaries of Brown and Waupaca counties. The westernmost boundary of the area is marked by the western borders of Wood, Juneau, and Sauk counties, excepting for one ax found in Grant County. All of the specimens are from the southeastern half of Wisconsin. Three axes and one fluted gouge are from Michigan, one ax is from Minnesota, one is from Illinois, and one is reported as found in Ohio.

The efforts of Mr. Ringeisen towards building up his collection were not confined to, or specifically intensified in the

rather restricted area represented by his collection. Consequently, it is assumed that the distribution indicated by his specimens is fairly representative of the total distribution of fluted axes. If this is true, the argument in favor of a cultural association of fluted axes and effigy mounds might be presented as more precisely an association of fluted axes with some cultural division of the effigy mound folks located in a southeastern section of the total effigy mound area. Such an interpretation, however, must depend upon a thorough survey of the distribution of all known fluted axes, which is outside the scope of this article.

In any such survey, the presence of "strays" well outside the margins of the concentrated area of occurrence may be explainable as a result of trade or travel, since trade among our Indians was common over wide areas, and since an ax is a piece of equipment easily carried, and readily obtainable by cultural strangers. If, however, the use of the fluted ax was other than utilitarian, representing some locally specialized custom, one would expect to find fewer "strays" remote from the area of usual occurrence.

Any useful attempt to classify the axes in this collection, fails because of their individual peculiarities. The resulting classification would be so arbitrarily forced and wholly artificial that it would be useless. At best, a simple division can be made between axes characterized by a series of longitudinally parallel flutes on one or both faces of the blade, and all of the rest of the axes on which there is some other arrangement of flutes. But this classification is so over-simplified that it serves no conceivable purpose. It fails to take into consideration such items as: basic shape of the tool — ax, gouge, adze, "spud;" type of groove; cross-section shape; type of poll; face beveling; and so on. Any arrangement which attempts to separate into categories associations of these items and the variety and arrangement of flutes serves but to add to the confusion. The artisans who made these axes certainly followed no set pattern, since no two axes are reasonably identical, and since the range of variation is gradual from one extreme to the other.

It would seem to be more profitable to employ illustrations

to exemplify the various traits that we have discussed. The type of specimen with which we have to deal is more easily visualized than described.

The presence of flutes on objects other than grooved stone axes is illustrated by the following three very exceptional specimens.

The fluted gouge shown in Figure 2 was found in Sangatuck Twp., Alleghany County, Michigan. The material is dark gray basaltic rock. One side of the bit edge is concave to produce a gouging stroke when in use. The back face of the gouge is longitudinally bisected by a bevel edge which divides the face into two gently angling planes, and each of these planes is marked by eight horizontal flutes directed to slant slightly diagonally from the medial crest toward the poll of the implement, extending to the face-margins. The impression created is that of a fern-leaf design. The flutes occur on one face of the gouge. If this is not a unique specimen, it at least falls into a most extremely rare category.

The stone "spud," or "handled celt" illustrated in Figure 3 was found in Milladore Twp., Sec. 3, Wood County, just south of the boundary separating Wood and Marathon counties. It is fashioned from a dark gray basaltic rock. One face of the blade exhibits three, broad, widely spaced flutes, the outer ones actually adjoining the respective edges of the implement. We believe this to be a unique specimen.

Although the longitudinal markings on the blade of the copper "spud" shown in Figure 4 may not be described as actual flutes, they do bear some resemblance thereto. It is highly improbable that this specimen was culturally associated with the fluted stone implements, since there is good reason to believe that copper tools of this type were the products of an Archaic culture and people located in Wisconsin during a period preceding the introduction of the grooved stone ax. The copper specimen was found by Clifford Petts on his farm, Sec. 15, Palmyra Twp., Jefferson County, Wisconsin. We believe that this is a unique specimen.

The fluted ax is a product of Wisconsin. Amoong all the class objects prized by collectors of archeological materials from a North American area north of Mexico, it probably is

the rarest. This may be due largely to the small, limited area of its origin, but it is rare even within that small area. The Ringeisen Collection of fluted axes is by far the most outstanding collection of these strangely attractive objects in existence. It should remain intact and permanently preserved in Wisconsin. To have it removed from the land of its origin would be a distinct loss to the state. To have such a collection, representing the efforts of one collector's lifetime, dismembered and scattered to the four winds, in or out of Wisconsin, would be tragic.

The range of patterns and location of flutes on the various surfaces available on the ax are adequately illustrated by photographs and drawings of twenty specimens selected from the collection; ten shown by means of drawings (Figs. 5, 6), and nine by means of photographic reproductions (Figs. 7-15). These examples do not exhaust the variety of treatment, since no two axes have identical fluting patterns, but will serve to represent the appearance of such axes, the nature of fluting patterns, and the maximum degree and variations both in ax shapes and decorative treatment.

Fig. 2. Fluted gouge, found in Sangatuck Twp., Allegan Co., Mich. 7¼ inches long, wt. 1 lb. 9 oz. Reingeisen Coll. No. 77 M P M Neg. 203596.

Fig. 3. Fluted "spud" or handled celt, found in Sec. 3, Milladore Twp., Wood Co., Wis., on edge of Little Aux Pleins Marsh. 6¾ inches long, wt. 15 ¾ oz. Ringeisen Coll. No. 73. M P M Neg. 203595.

Fig. 4. Copper "Spud" or socketted ax with flute-like markings, found in 1939, Sec. 15, Palmyra Twp., Jefferson Co., Wis. 5¼ inches long, wt. 2 lbs. 3⅝ oz. Ringeisen Coll. No. 64. M P M Neg. 74178.

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DESCRIPTION OF FIGURE 5

Selected patterns of flutes on specimens in the Ringeisen Collection.

No. 1 Wis., Outagamie Co., Grand Chute Twp. 10⅛ in., 6 lbs. 9⅜ oz. No. 13.

No. 2 Wis., Sheboygan Co., Russell Twp., Range 20 E, Sec. 3. 4 in., 13 oz. No. 26.

No. 3 Wis., Rock Co., Johnstown Twp. 4 in., 1 lb. 2 oz. No. 25.

No. 4. Wis., Washington Co., Farmington Twp., Sec. 27. 9¼ in., 5 lbs. 3¾ oz. No. 68.

No. 5 Wis., Rock Co., Beloit Twp. 7¾ in., 3 lbs. 6⅜ oz. No. 53.

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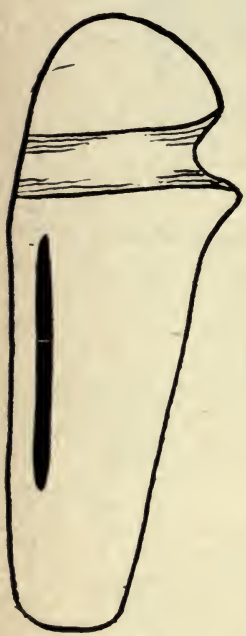

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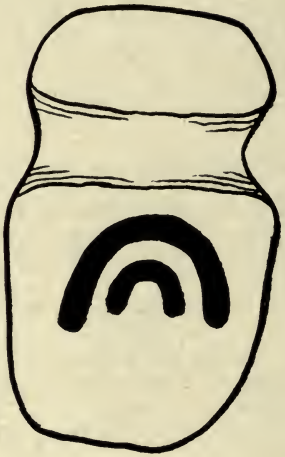

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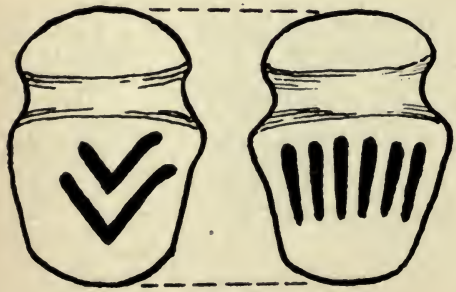

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DESCRIPTION OF FIGURE 6

Selected patterns of flutes on specimens in the Ringeisen Collection

No. 6 Wis., Waukesha Co., Merton Twp. 6½ in., 2 lbs. 14 5/16 oz. No. 12.

No. 7. Wis., Waukesha Co., Menominee Twp., Sec. 13. 6¾ in., 1 lb. 1¾ oz. No. 54.

No. 8. Wis., Dane Co., Dunkirk Twp., Range 11 E., Sec. 34 (unfinished). 11 in., 5 lbs. 4½ oz. No. 14.

No. 9. Wis., Washington Co., Addison Twp. 7⅝ in., 5 lbs. 12¾ oz. No. 27.

No. 10. Wis., Marquette Co., Springfield Twp. (1880). 6¼ in., 1 lb. 1¼ oz. No. 62.

No. 11 Wis., Calumet Co., Stockbridge Twp. (Village), 1910. 3½ in., 9¾ oz. No. 5.

No. 12. Wis., Winnebago Co., Winchester Twp. 4¾ in., 1 lb. 12½ oz. No. 22.

No. 13 Wis., Manitowoc Co., Centerville Twp. 3⅝ in., 9 oz. No. 56.

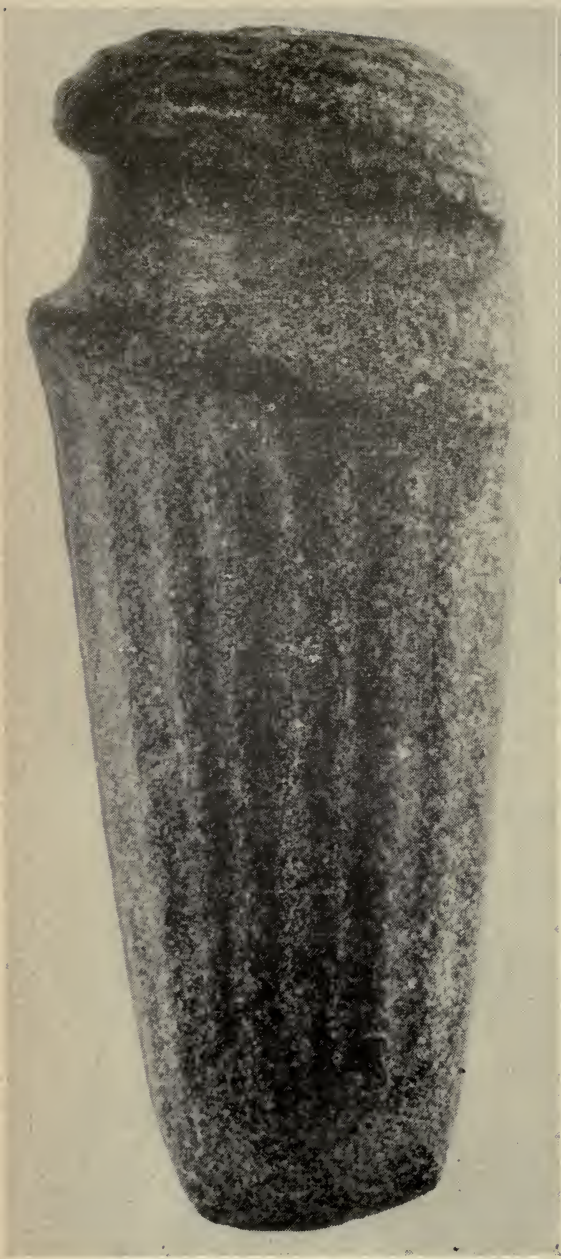

Fig. 7. Ax found in 1880, S. E. ¼ of S. W. ¼, Sec. 7, Range 21 E., Rhine Twp., Sheboygan Co., Wis. 9 inches long, wt. 4 lbs. 15⅝ oz. Ringeisen Coll. No. 1. MPM Negs. 419905, 73025.

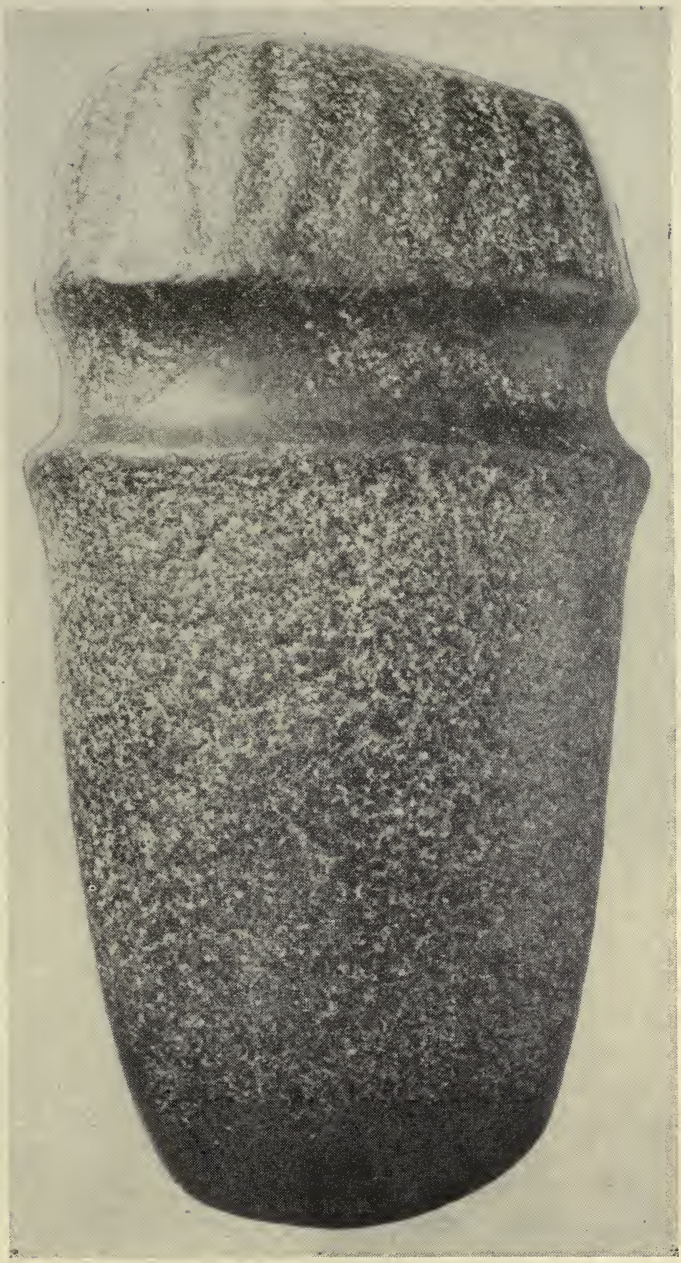

Fig. 8. Ax found in Bloomington Twp., Grant Co., Wis. 12 inches long, wt. 14 lbs. 9¼ oz. (largest in collection). Ringeisen Coll. No, 63. MPM Neg. 73847.

Fig. 9. Ax found in 1887. Oak Creek Twp., Milwaukee Co., Wis. 5⅞ inches long. wt. 1 lb. 15 oz. Ringeisen Coll. No. 4. MPM Negs. 420140, 73086-87.

Fig. 10. Ax found in Montello Twp., Marquette Co., Wis. 9¼ inches long, wt. 4 lbs. 12⅞ oz. Ringeisen Coll. No. 38. MPM Negs. 420190, 73027.

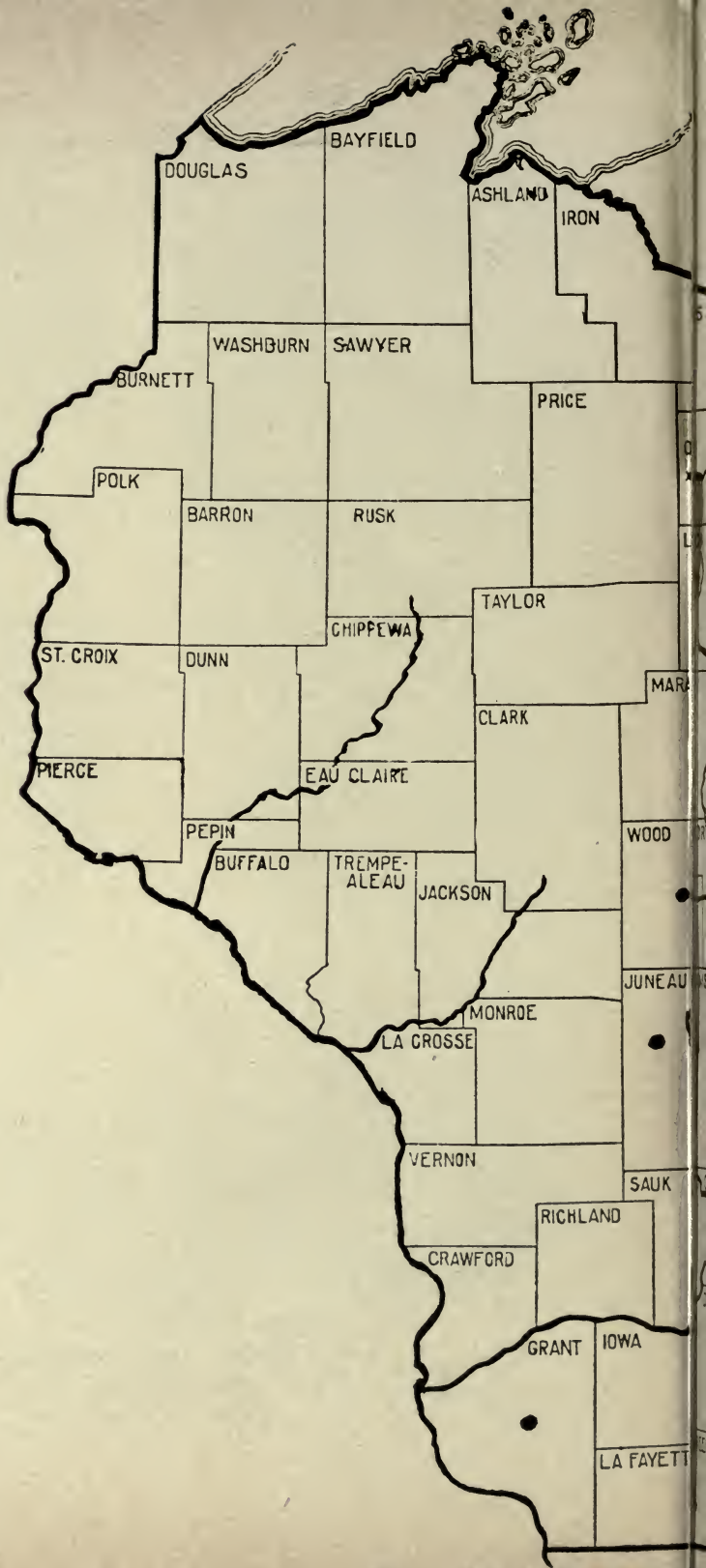

Fig. 1. Map of Wisconsin sh
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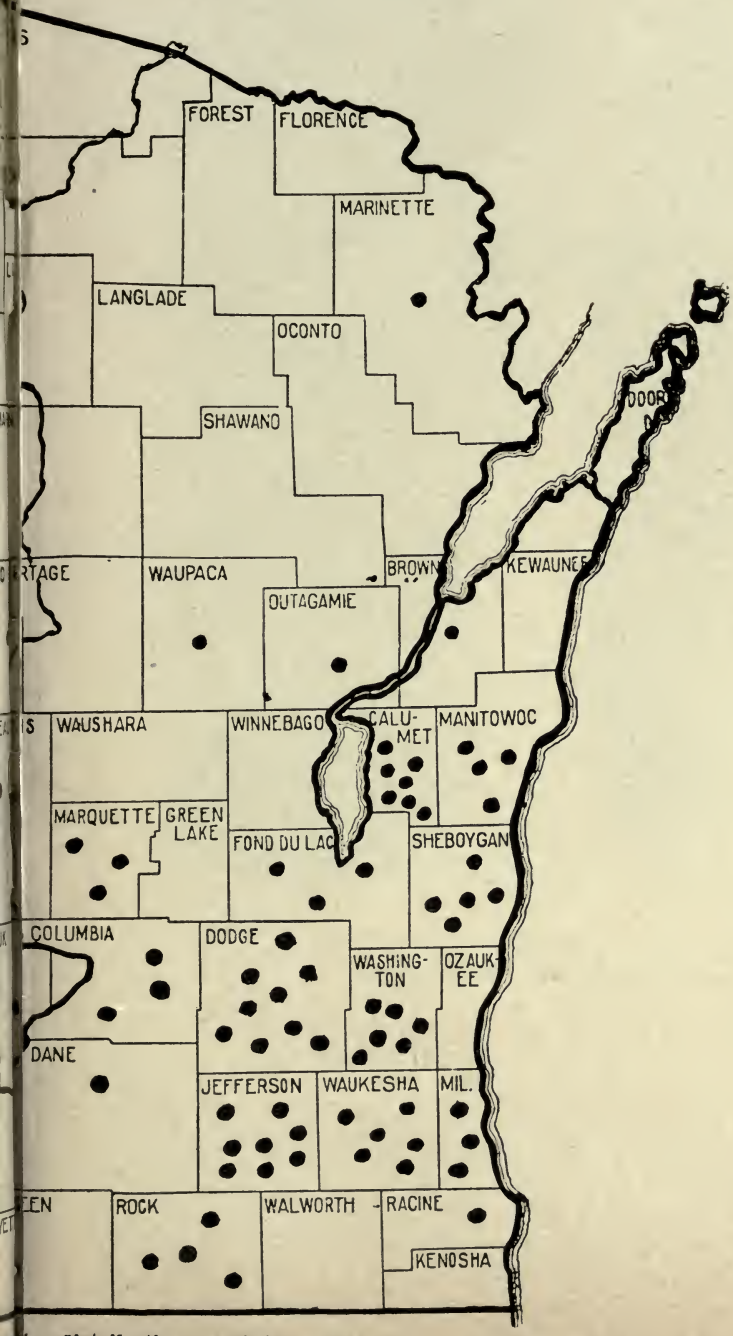

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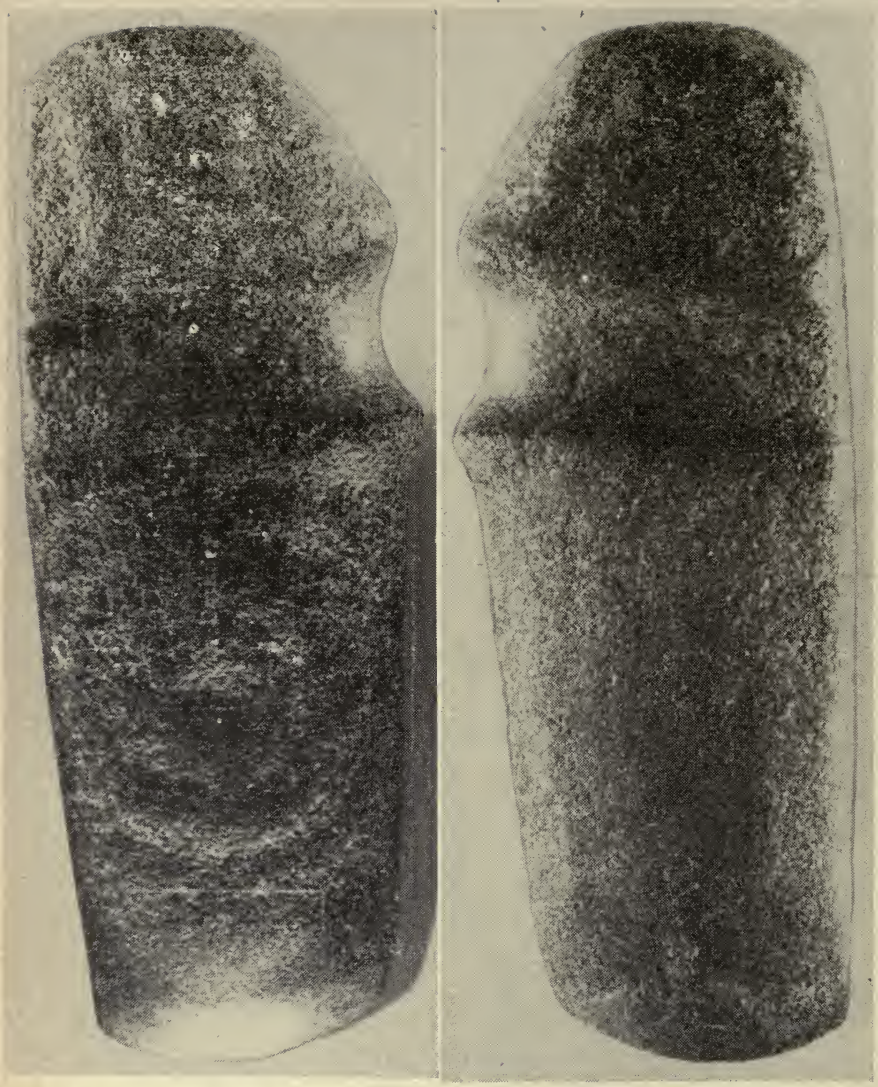


Fig. 11. Ax found in S. ½ of N. ½ of N. W. ¼, Sec. 16, Harrison Twp., Calumet Co., Wis. 9¾ inches long, wt. 5 lbs. 12½ oz. Ringeisen Coll. No. 7. M P M Negs. 73029, 73030.

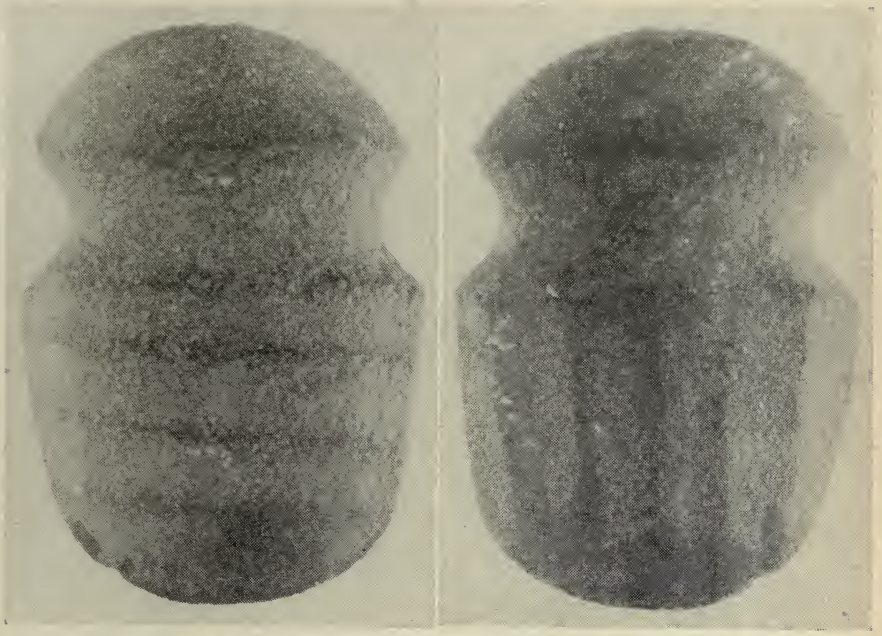


Fig. 12. "Pebble" ax. found in Nepeuskun Twp., Winnebago Co., Wis. 4 inches long. wt. 10 9/16 oz. Ringeisen Coll. No. 36. MPM Negs. 420143, 420145.

Fig. 13. Ax showing "snake" or serpentine fluted pattern on one face of blade. Found in 1898, Sec. 29, Range 16, Oakfield Twp., Fond du Lac Co., Wis. 10¾ inches long, wt. 5 lbs. 14½ oz. Ringeisen Coll. No. 6. MPM Negs. 73097, 73098.

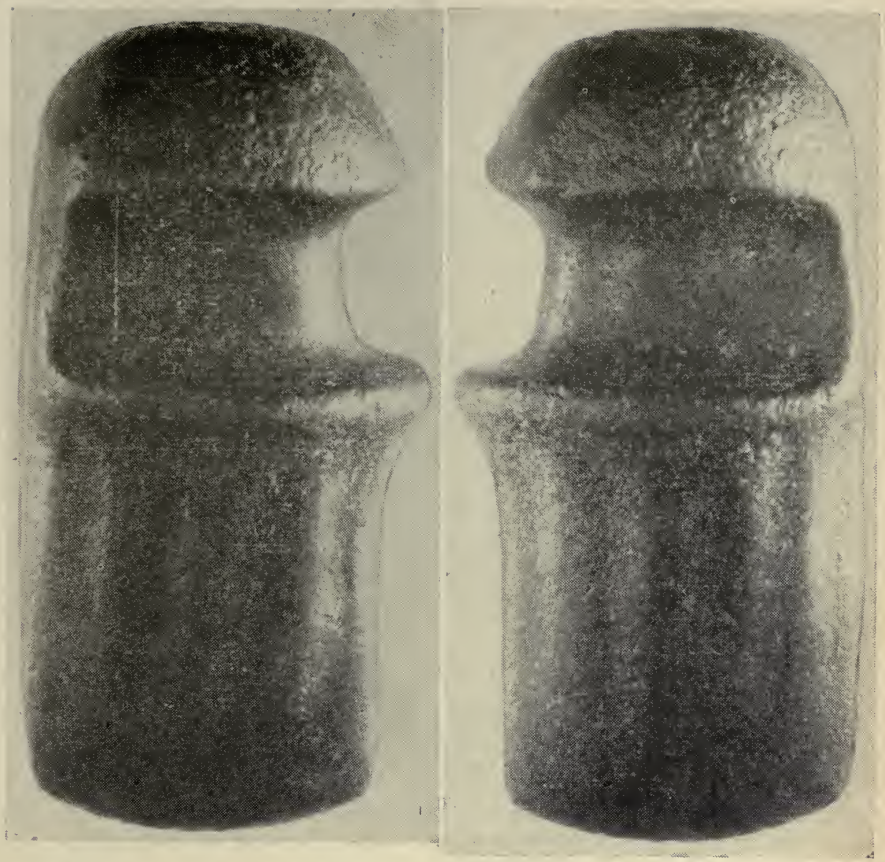


Fig. 14. Ax found in 1865, Ashippun Twp., Dodge Co., Wis. 6 3/16 inches long, wt. 2 lbs. 3 5/16 oz. Ringeisen Coll. No. 3. MPM Negs. 419968-69.

Fig. 15. Ax found in 1895, Sec. 17, Range 20 E., Norway Twp., Racine Co., Wis. 6½ inches long, wt. 2 lbs. 10 oz. Ringeisen Coll. No. 2. MPM Negs. 419965-66.

WHY NOT COMPLETE your series of the WISCONSIN ARCHEOLGIST? Most, but not all, back issues are available at 50¢ per copy for the New Series and $1 for the Old Series. Write to our Secretary . . . Phil Wiegand, 1276 North 63rd Court, Wauwatosa, Wisconsin.

EDWARD GREEN of the Milwaukee Public Museum art staff deserves a "thank you" for drawing the cartoon used in the Collector's Corner.

THE WISCONSIN ARCHEOLOGIST is instituting an INTERESTING SPECIMEN page. If you have a unique specimen you think others would like to know about send us a brief description of it including measurements and locality found. If you do not have a photo of it send in the specimen and we will photograph it for you.

THE STATE HISTORICAL MUSEUM recently acquired the H. L. Mumm collection of Wisconsin Indian material, a gift of the Banta Publishing Foundation. The Potawatomi, Chippewa, Menomini, and Winnebago tribes are represented in the total of over 600 specimens. We are happy to see this excellent collection permanently housed in our state.

WELCOME ABOARD. If any of these NEW MEMBERS are in your general area, why not drop in and get acquainted?

BRUCE MOWERS, Truax Field, Madison.

FRANK J. SODAY, 310 Walnut St. N. E., Decatur, Ala.

RALPH PEARSONS, 2453 North 17 Street, Milwaukee.

WITH THE WEATHER pleasant again you might want to have a look at LIZARD MOUND STATE PARK near West Bend. This is an excellent group of 31 effigies including the lizard, eight panthers, two birds, and an assortment of conicals and linears. Take highway 144 out of Barton (just north of West Bend) to County Trunk "A", turn right and go one mile to park entrance.

ELECTION OF OFFICERS was held at the March meeting in Milwaukee and last year's slate was re-elected for another

term. Congratulations to President Freckmann and the other officers of the WISCONSIN ARCHEOLOGICAL SOCIETY.

WORK AT AZTALAN this summer will concentrate on restoration and consist of the erection of more logs of the stockade.

WARREN WITTRY of the STATE HISTORICAL MUSEUM will head an archeological dig to investigate rock shelter occupations in the driftless area of southwestern Wisconsin under the aegis of that institution and the WISCONSIN ARCHEOLOGICAL SURVEY.

DOC BRUDER points out that there is a larger effigy mound than the 624 foot bird at Madison mentioned in this column in that last issue. McLachlan in Vol. 12, page 157, Wisconsin Archeologist Old Series, shows a tapering linear mound 645 feet in length. While this is not an effigy mound in the strict sense of the wod, such mounds were built by the Effigy Mound people. WARREN WITTRY writes that the **longest** effigy mound he knows of is a panther 656 feet in length located in Section 5, Greenfield Twp., Sauk County. It is pictured and described by A. B. Stout in the Wisconsin Archeologist, Old Series, Vol. 5, No. 2, page 251. Mr. Wittry concedes that the Mendota bird is the largest in terms of bulk; but your editor concedes that Mr. Wittry's panther holds the record for sheer length.

THE FLUTED AX STORY which never seems to die is the one told of Mr. Kuehne, a Sheboygan jeweler and relic collector, who kept an exceptionally large and fine specimen in one of his jewelry cases. It was said that Mr. Kuehne had a standing offer of $100 for the ax from the U. S. National Museum, and this sum in those days was impressive. One day a man came in, saw the ax, and asked to see it. It was taken from the case, and after the stranger had examined it, he laid a five-dollar bill on the counter and said, "I'll take this." Mr. Kuehne picked up the bill, put the ax back in the case, and quietly said, "It will cost you that much just to look at it."

Let's hear from you,
Bob Ritzenthaler,
Public Museum,
Milwaukee.

THE MENDOTA HILLS BIRD EFFIGY MOUND, DANE COUNTY

Warren L. Wittry

Another of our rapidly disappearing effigy mounds was destroyed in November, 1954, when a road was bulldozed through a fine example of the straight-winged bird type. It was located on the northwest shore of Lake Mendota in the W½, NW¼, Sec. 36, T8N, R9E. The area, known as the Mendota Hills Subdivision, is now in the City of Madison and is being developed by the I. Hovde Realty Company. It was due to a timely telephone call from Mr. Hovde that we were able to map and partially excavate this mound. Since there is no previous record for this earthwork, what is here recorded shall be the only permanent knowledge concerning it.

Apparently it was a solitary mound, though cultivation may

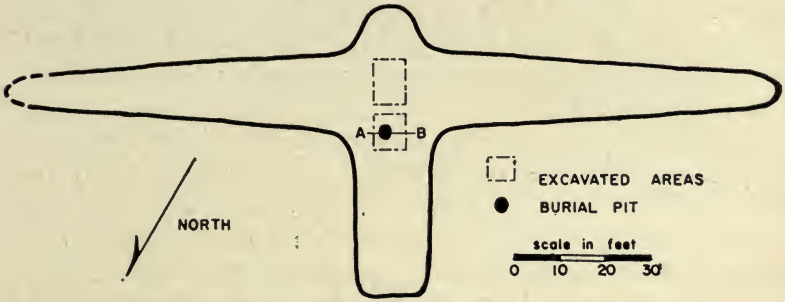


FIG. 1. The Mendota Hills Bird Effigy Mound

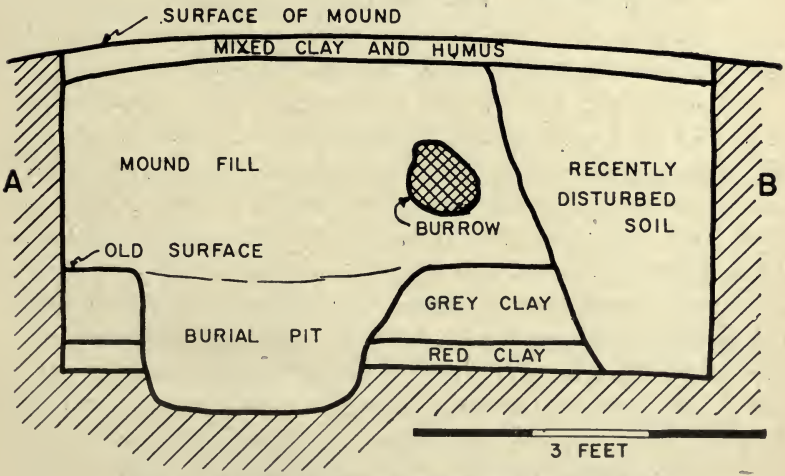


FIG. 2. NE-SW Profile through the Heart Region.

have erased all traces of nearby mounds in the fields immediately to the north and east. The nearest known mound is a linear about 150 yards southeast of the bird. Another road has cut off a small section of the eastern end of the linear but the remainder will be preserved in a small park.

Total length of the head and body (Fig. 1) was 64.6 feet. The right wing was 85.3 feet from the centerline to the tip and while a small portion of the left wing had been cultivated away it seems reasonable to assign a similar length to it, making a wingspread of 170.6 feet. The maximum height, measured on one of the profiles, was 2 feet. Mapping and excavation took place on November 7, 1954, with William Crocker, Norma Diamond, Joan Freeman, and Richard Keslin, all graduate students in anthropology at the University of Wisconsin, assisting. Because time was limited and there were several large pits in the body portion we placed our trenches in the shoulder and heart positions.

As digging progressed in the trench in the heart region it became apparent that a pit had been dug, probably fairly recently, by unknown persons in search of relics. There had been no evidence of this pit on the surface and our enthusiasm quickly waned because the heart region usually contains a fireplace, burial, or some other feature. We were elated, however, to find that these persons had completely missed the burial pit. Their digging was a little to the right of the centerline and the burial pit lay wholly to the left of it (Fig. 2).

The burial pit was slightly oval as seen from above and measured 2.9 feet in length (NW-SE) and 2.5 feet in width. It was basin-shaped in vertical cross-section with a depth of 1.2 feet below the old surface which was clearly visible on all profiles. Our disappointment returned when we discovered that what the relic hunters had missed, the rodents had not. Only a few half-disintegrated fragments remained to indicate that the pit had once contained a burial. A badly decomposed section of skull and several teeth lay directly on the red clay subsoil at the northern (toward the tail) end of the pit. Judging by the development of the teeth, the individual was about 9 years old at death. The few other bone fragments were so disarranged that we could not determine the original position of

the body, but the small size of the pit rules out an extended burial and would suggest either a tightly flexed or bundle burial.

No artifacts were found except for a few flakes of local chert scattered about in the mound fill. The fill of the burial pit contained quantities of clay, evidently the same soil which had been removed during its making.

From the above evidence, the building of this mound can be reconstructed as follows: A pit was dug and the burial placed in it. The pit was covered with the same soil removed from it and a mound in the shape of a bird built over the grave using nearby surface soil. Two things are worthy of note: that there was no special preparation of the mound floor and the filling of the pit with earth removed from it—a departure from the common practice of leaving this earth on the boundaries and filling the pit with the same material used to build up the mound. Whether or not there were additional features located in parts of the mound not excavated is not known.

Interesting Wisconsin Specimens

INCISED BOATSTONE
Dr. E. G. Bruder Collection

Of banded slate this fine piece is 2¾ inches long and 1¼ inches wide with a hole at each end. Incised lines occur on the upper edge, both sides, and bottom. Incised boatstones are extremely rare. This was found near Hartford, Hartford Tnsp., Washington County.

PERFORATED SHELL DISK
Milwaukee Museum Collection

Probably cut from the lip of a Gulf Coast conch shell. It is 2½ inches in diameter, and ⅓ inches in thickness. Two parallel holes a half inch apart are drilled from one edge to the other near the center. Found by George Pasco in Marquette County. This is the only such specimen known for Wisconsin. Culture unknown.

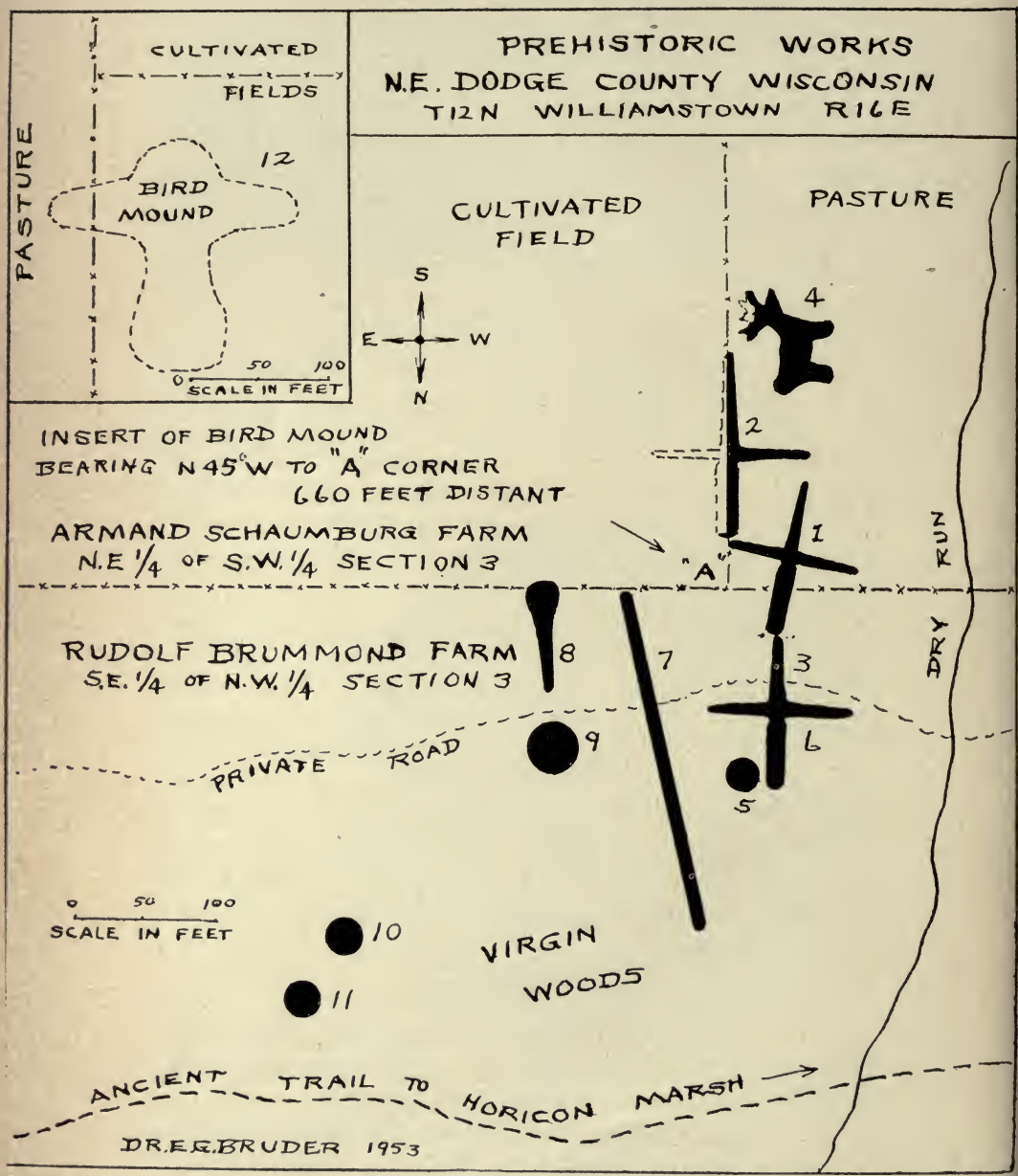
THE BRUMMOND-SCHAUMBERG EFFIGY MOUND GROUP, DODGE COUNTY

Dr. E. G. Bruder

This portion of northeastern Dodge County contains the last of the once large numbers of groups of prehistoric earthworks which at one time were clustered around the great bend of the Rock River, from the last water fall at Keekoskee to the Brummond and Schaumberg farms. The ancient main trail passed to the north of this bend, then northwesterly through the Rudolf and Arnold Brummond Farms. For many years it was the only entry for the early settlers into this formerly heavily timbered area. The river, after it leaves the last rapids (the site of the present Keekoske Dam), becomes quiet and deep. Two large clear brooks enter this bend, one from the northwest and the other from the northeast. The historic Potawatomi stretched their nets across the mouths of these two cold spring brooks at the end of the spawning season, and used them as fish-storage ponds for months. They were the first sizable streams encountered, as the fish came out of the many bays and channels of the huge Horicon Marsh in the spring to spawn. This annual event gradually grew into the well known "Keekoskee Fish Story." That the many natural advantages for survival brought several different cultures of prehistoric people is evidenced by the different types of earthworks, the unusual kinds of effigy mounds and other earthworks; and the surface finds of different types of stone and copper artifacts. A detailed study of these earthworks of northeastern Dodge county, an area never investigated, will tell us more about the different peoples who at various times occupied this area.

Mound Descriptions

Several mounds, unusual for northeastern Dodge County, are located in this group. Among them is a deer effigy, the only linear mound with parallel sides (there are several tapering linears), and the three crane effigys. The latter have often been described as crosses, but they definitely resemble cranes. Of the four located in this area, one has recurved wings, the curving being barely perceptible. During the survey of this


PREHISTORIC WORKS
N.E. DODGE COUNTY WISCONSIN
T12N WILLIAMSTOWN R16E
CULTIVATED FIELDS
PASTURE
BIRD MOUND
12
0 50 100
SCALE IN FEET
CULTIVATED FIELD
PASTURE
S
E
W
N
4
2
1
"A"
DRY RUN
INSERT OF BIRD MOUND
BEARING N45°W TO "A" CORNER
660 FEET DISTANT
ARMAND SCHAUMBURG FARM
N.E. 1/4 OF S.W. 1/4 SECTION 3
RUDOLF BRUMMOND FARM
S.E. 1/4 OF N.W. 1/4 SECTION 3
8
7
3
6
9
5
PRIVATE ROAD
0 50 100
SCALE IN FEET
10
11
VIRGIN WOODS
ANCIENT TRAIL TO HORICON MARSH
DR. E.G. BRUDER 1953

group a lone crane winging his way directly over our heads westward to the Horicon Marsh nearby. The prehistoric architects had reproduced correctly the position of the neck, body, and wings of the crane in flight. A more timely coincidence would be difficult to find.

Crane Effigy No. 1 is 117 feet in length, with 36 feet of the body north of the fence on the R. Brummond farm. The remaining part of the body, neck and wings is located on the Armand Schaumberg farm to the south. Both wings are 42 feet 6 inches long and 18 inches high. The neck is 57 feet long and averages 22 inches high. The body is 60 feet long and 27 inches high. All three crane mounds show a slight constriction of the body immediately below the wings. The average width of the body drops from 16 feet to 14 feet at the wings. All of these crane effigies are symmetrically made. The left wing of of crane No. 1 touches the east fence, but the right wing tip clears the north fence by 4½ feet. Both wings have a slight curving to the rear. The mound bears S 17° W, mg. It has never been disturbed.

Of crane effigy No 2 almost half has been destroyed. The west half of the neck and body remain and all of the right wing. It bears S 3° W., which saved the larger part, the fence bearing due south. The body is 59 feet long and 30 inches high. The neck is 55 feet long, and 22 inches high. The right wing is 55 feet long and tapered in width from 7½ feet, near the body, to 3 feet at the extreme tip. It is 21 inches high. The left wing is now almost completely destroyed by cultivation. This field contained many mounds, but no record was ever made of them.

Crane effigy No.3 bears S 50° W, and is located 36 feet to the north of the line fence on the R. Brummond farm. The crane is 100 feet long, its head being 10 feet to the west of crane No. 1. Each wing is 41 feet in length, 9 feet wide at the body and 3 feet at the tip. The wings are 1 foot high near the body and 8 inches at the tip. The neck is 50 feet long, 10 feet wide at the wings, tapering down to a width of 3 feet at the head. It is 20 inches high. The body is 50 feet long, 30 inches high, and averages 16 feet in width to a point 10 feet from the end. From here to the end of the body it gradually

tapers to 5 feet. Near the body and below its right wing is a small conical mound 12 feet long, 6 feet wide, and 2 feet high. To the left of the body is a conical mound 2½ feet high and 25 feet in diameter. None of the above mounds have been disturbed.

Number 4 is a deer effigy located south of the line fence on the A. Schaumberg farm. The field is used as pasture, but it evidently has felt the break-up plow many years ago which slightly mutiliated the horns and the head of the mounds. Its body is 41 feet long, and 19 feet through the widest part, with a height of 30 inches. Its legs are 14 feet long, and 14 inches high. The neck is 10 feet wide, and 18 inches high. The distance from the back of the neck, next to the antlers, forward to the tip of the jaw measures 13 feet. The five prongs measure 14 inches in height, but are not distinct compared to the rest of its anatomical features. It is 36 feet west of the east fence at the head of the No. 2 crane, 45 feet south of the right wing tip of No. 2 crane, and due south of No. 1 crane, 56 feet away. It is the only known deer effigy on the east border of the Horicon Marsh.

Number 7 is a long linear with equidistant sides 248 feet in length, 12 feet wide, and 30 inches high. It bears S 12° E mg., and projects about 12 feet south of the line fence into the A. Schaumberg farm. It is 27 feet east of the left wing tip of No. 3 crane mound, and 25 feet east of conical No. 5. The linear is well preserved, and is the only one of its type known on the east border of the Horicon Marsh.

Effigy mound No. 8 is a tadpole extending 60 feet north of the line fence and 6 feet south. It is 15 feet wide at the part of the body north of the fence, tapering down to 3 feet at the tail. Its body height is 30 inches, with the tail gradually leveling off to 20 inches, and ending with 10 inches at the tip. It bears S 5° and is 43 feet east of Linear mound No. 7.

Conical No. 9 is located 26 feet due north of the tadpole. It is 34 feet in diameter, and 40 inches high. The long linear bears due west, and is 40 feet away.

Numbers 10 and 11 are conicals bearing N 45° E, from No. 9 conical, and are in poor condition.

Number 12 is the remains of a large bird effigy. It former-

ly resembled the eagle, and was truly a beautiful and symmetrically built mound, well remembered by the people of this locality who viewed it many times before it was plowed. It formerly was 6 feet high, a very unusual height for an effigy mound. It is located in the cultivated field of the extreme northeast corner of the Armand Schaumberg farm adjoining the Rock River. It bears S 12° W, located on a ridge in the same direction. The Rock River is 110 feet to the east. Station A on the fence corner junction near the left wing tip of crane effigy No. 1 bears N 45° W and is about 660 feet away from the tail of the bird effigy. Its measurements today are only approximate, with a combined wing spread of 153 feet, a length of 148 feet, and a body height of 40 inches. The wings are 20 feet wide near the body, tapering down to 6 feet near their tips. The width through the body is 32 feet, and across the tail it measures 43 feet. It was one of the most beautiful of all prehistoric effigy mounds in Wisconsin and 25 years of cultivation could not destroy it entirely. It never was molested by curio seekers. At one time 6 feet of the left wing projected beyond the east fence into the adjoining pasture.

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THE WISCONSIN ARCHEOLOGIST

KANSAS CITY
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OCT 27 1955

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September, 1955 Vol. 36, No. 3

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Milwaukee, Wisconsin
Incorporated, 1903

For the purpose of advancing the study and preservation of Wisconsin Indian Antiquities.

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New Series

MILWAUKEE, WISCONSIN, SEPTEMBER, 1955

THE USE OF EARTH MOVING MACHINERY AT AZTALAN

Chandler W. Rowe

For many years archeologists have been emphatic in their rejection of heavy, earth moving equipment as proper tools for conducting archeological research. The objections to the use of such machinery are generally valid. It is true that artifacts may be lost, crushed and broken by heavy equipment; it is also true that profiles cut by these machines are often smeared. However, it is becoming increasingly clear that when used properly and in the right situation, the bull-dozer, pan, road-grader and end-loader do have a figurative place in the archeologist's "doodlesack".

During the 1954 season of excavation at Aztalan, an experiment in the archeological use of heavy equipment was conducted. The decision to use such machines was colored by two facts: (1) trained archeological excavators cannot be obtained unless offered a reasonable salary and the operational budget is low each season, and (2) we anticipated working out two problems during the 1954 season, the location of the main stockade entrance and the restoration of the northwest pyramid. With a small crew and only eight weeks in which to work, it was clear that some method of speeding up the handling of volumes of dirt was necessary.

Accordingly, it was decided to use heavy equipment on the site. Dr. Waldo Wedel had had considerable success a few years before with the use of a road-grader in locating Plains Indian earth-lodges, so the idea, while not in common use, was not entirely original. A road-grader was employed at Aztalan

to remove dirt in the suspected location of the stockade entrance. It was felt that very little damage could result from the use of machinery here since cultural material does not collect in great quantiay at the base of the stockade and what little there is tends to appear in storage or refuse pits in any event. In addition, it is not necessary to go down more than three or four inches below the plow zone in order to locate the stockade. Plow zone material, because of its mixed nature as the result of years of disturbance by the plow, is normally discarded for extensive laboratory use and merely kept with the surface collection. As a result, with the use of a road-grader the stockade entrance was located and worked out in four weeks by two men in addition to the grader operator, probably a little less than one third of the time by a larger crew using traditional techniques. Refuse pits uncovered during the operation were not harmed.

Complete restoration of the northwest pyramidal required investigation of the mound by trenching technique prior to rebuilding in order to determine the original dimensions of the earthwork. Two trenches, one in a north-south direction and the other in an east-west direction, were run in. The east-west trench was dug by hand using the pick-mattock and the shovel. The north-south coordinate (the longer of the two) was cut in with a six foot end-loader. As the end-loader made each cut the area was carefully checked for cultural features and a man was stationed at the dirt pile to check for artifacts. This trench, which measured one hundred and ten feet in length, six feet in width and varied in depth from two to six feet, was run in by machinery in three hours. By comparison, it required five eight hour days for two men to cut half of the east-west trench, a trench which measured forty feet in length, three feet in width and varied from two to six feet in depth.

With the exception of one very interesting and unusual feature (which will be described in a later article), material in the northwest pyramid was meagre. The writer is convinced

that nothing of significance was lost by employing the end-loader. The profiles of the machine cut trench were smeared, but were easily re-cut by hand with a pick-mattock.

The actual restoring of the northwest pyramid to it original dimensions was accomplished with an eleven yard pan and a bull-dozer. Since much of the original earth used by the Indians in mound construction had been lost or washed away through natural erosion and plowing, a considerable amount of dirt had to be borrowed from the surrounding area to rebuild the mound. The pan is an excellent implement for borrowing dirt since it does not have to dig a hole or 'borrow pit', but can scrape up thin layers from a wide area. Most of the dirt used in mound restoration was plow zone material which, as was mentioned earlier, contains badly mixed materials. This dirt was carried up and deposited on the mound and then levelled and further spread by the bull-dozer. A careful check was made after each cut made by the pan to prevent the destruction of materials due to inadvertent opening of a cache or burial by the machinery. This process was continued until the original contours of the mound were attained. An application of sod over the finished restoration insured against erosion of the fresh fill.

In view of the excellent results obtained at Aztalan, it is the writer's opinion that heavy equipment, when used at the proper time, in the proper place, and particularly when operated by competent personnel, has advantages for archeology which far outweigh the disadvantages.

The Society's ANNUAL DINNER held in Milwaukee on June 27th was a distinct success. Our highest award, the Lapham Research Medal, was presented to DR. DAVID A. BAERREIS and DR. EDGAR G. BRUDER for distinguished work in the field of Wisconsin Archeology.

Volume 1, No. 1 of the ARCHAEO-LOG was sent to us in June by the GREEN BAY chapter. This is a two page mimeographed poop sheet on current happenings up there. We wish it success.

President KERMIT FRECKMANN, BOB RITZENTHALER, and ART NIEHOFF spent an interesting half day in May mapping two fine goose effigy mounds near West Bend.

HOW ABOUT signing up one or two of your friends as members in the Wisconsin Archeological Society. One dollar pays them up to January, 1956. Send names and addresses to:

Madison Area: Warren Wittry, State Historical Museum, Madison, Wis.

Green Bay Area: Ellis Burcaw, Neville Public Museum, Green Bay, Wis.

Milwaukee Area: Arthur Niehoff, Milwaukee Public Museum, Milwaukee, Wis.

ED LUNSTED was in Milwaukee to show us the most recent finds from the Reigh Site near Oshkosh. Included was a fine copper ax and a number of "ace of spades" shaped copper arrow points.

THE FAMOUS BONE WHISTLE from the Oconto site, identified in the report as deer bone, turns out to be from the wing bone of a trumpeter swan as confirmed by men at Smithsonian and Chicago Museum of Natural History.

WELCOME ABOARD . . . . thirteen new members have recently joined the Society:

Jack M. Bell, 330 Carroll Street, Madison
W. G. Biedermann, c/o Masonic Home, Dousman
Jerrold Bracher, 1009 Marquette Avenue, Green Bay
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SOME PROVOCATIVE THOUGHTS ON THE DEVELOPMENTAL SEQUENCE OF CERTAIN ARTIFACTS IN EASTERN UNITED STATES

The following is a report on a talk given by Mr. Jeffre Coe, archeologist at the University of North Carolina, as reprinted from the NEWS LETTER OF THE ARCHAEOLOGICAL SOCIETY OF NORTH CAROLINA, April, 1955.

"Mr. Coe traced the development of the projectile point types, the axe types, the atlatl types, and the pottery types from their earliest occurence in the East to the period of white contact. The change in styles was noticed for projectile points from large stemmed and notched points made specifically for use with the spear and atlatl to the small triangular arrow points which were in common usage by 1500. The pottery types were traced from the early form of stone pots with lugs at each end to crude clay pottery with coarse ground stone or fiber temper to the more expertly made pottery of the Siouan tribes of historic times. The axe was traced from a full-grooved form, to a three-

quarter grooved form, to a celt, then to a copper axe with expanded blade. From this copper axe with the expanded blade it was noticed that the Indians began to make imitations of this axe in stone, with the handle attached. These are the monolithic axes of recent times, made entirely of stone with the handle and the blade being made from one piece. Another interesting development was that of the atlatl weights. These were very simple in design and utilitarian in purpose when first making their appearance. They remained utilitarian (to give proper balance to the atlatl or spear-thrower) until the introduction of the bow and arrow when they became almost obsolete as a weapon, but were retained as a ceremonial weapon or symbol. At this time the weights became very elaborate in shape and size, varying from butterfly shapes to reel-shapes. This object finally developed into the so-called "mace" shown held in the hand of the figures carved on shell and copper gorgets from the "Death Cult" sites. These developments in artifacts and the time periods assigned to each are fascinating aspects in archaeology, and valuable in that once a type or style is dated in relation to another type or style through stratigraphy or Carbon 14, a series of events can be established which will enable a reconstruction of the sequence of cultures in the area being studied.

This summary was illustrated with slides and narrated by Mr. Coe in such a way that it was possible to see in outline in a few minutes information that has taken the archaeologist many years to obtain."

ARCHEOLOGICAL DATING METHODS

James Warren Porter

This paper is a survey of the major methods used in the dating of archeological material. Since there are vast amounts of literature on archeological dating, this paper is to be thought of as a brief on the subject and is to be used as an appetizer. To realize the importance of archeological dating it is necessary to establish what archeology is and what is its purpose. Archeology is the study of the material remains of man with the purpose of establishing the story of his early history and culture. Archeology must work without the benefits of written history, therefore eliminating the chance for an absolute date for every find. One definition I like is that an archeologist is the Sherlock Holmes of anthropology (Wissler, 1943, p. 121). The evolution of man, from both the cultural and physical viewpoint, can not be understood unless the time element is introduced. What good is the discovery of an archeological object without first knowing where, chronologically in the evolution of man, the object fits? When this is known, then the cultural value of the object can be implied. There are two types of dating in archeology—(1) absolute (2) relative. The absolute dates are dates in actual years, as counted from the present, and are, of course, the most desirable. Unfortunately there are too few methods for accurately determining absolute dates and those that are available are still relatively too new to be accepted without some reservation. Most of the dating is of a relative nature, but this does not mean that it will always be true. Sometime in the future there will be men who can see just a little deeper into the problem and who will develop methods of turning the present relative dates into absolute dates.

When an archeologist attempts to establish a date, whether absolute or relative, for some given object, he is required to draw his information from one or more of the physical or natural sciences. Because of this, I have decided to pattern my development of this paper by dividing the material into: (I) Methods of the Physical Sciences, and (II) Methods of the Natural Sciences.

I. PHYSICAL SCIENCES

A) GEOLOGICAL METHODS

1) Stratigraphic-geomorphic method
2) Varve analysis
3) Shore-line method
4) Rate of stream-channel meandering
5) Geological processes with determinable time rates

Stratigraphic-Geomorphic Method

The stratigraphic-geomorphic method of dating is probably the most used because of its universal applicability. This method is often overlooked since it is the most obvious and first step used when attempting to assign relative dates to archeological sites. As the term implies, this method is based upon geological stratification, whose relative sequence can be determined, and upon geomorphological features that can be explained and dated relative to the Pleistocene.

The dating of human remains, associated with the strata or geomorphological features, can be derived by identifying the feature and knowing that it was formed under certain specific climatic conditions whose approximate position in time is already known. The sites must be located in strata (or related to some local geologic event) that can be correlated with other local deposits which are hinged to some expanded chronology, such as the history of the postglacial climate or the Pleistocene (Heizer, 1953, P. 6).

To exemplify this method I have chosen to discuss the association of human remains with a river terrace. These terraces are topographic surfaces that mark former valley floor levels (Thornbury, 1954, p. 157). In general, they are visible evidence of former floodplains and are a result of river erosion. Cross-sections of a valley rich in terraces would look like steps descending from the top of the valley to the present level of the river. These steps would range in relative age from the top to the bottom of the valley. Knowing these facts, an archeologist, when finding some material in a terrace, has a method for relative dating.

The problem in the terrace method is the correlation of the

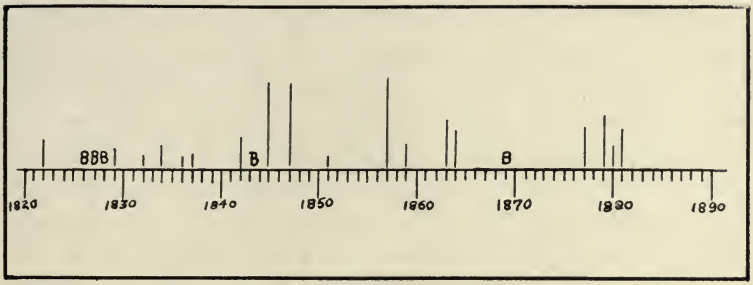


Fig. 1. Normal rings are not marked but merely counted. A vertical line indicates a narrow ring; the longer the line, the narrower the ring. 'B' indicates an unusually broad ring.

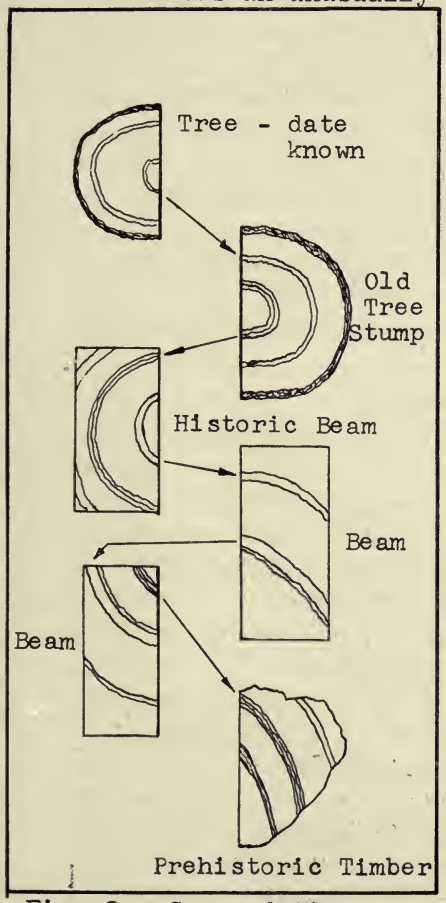


Fig. 2. Cross-dating.

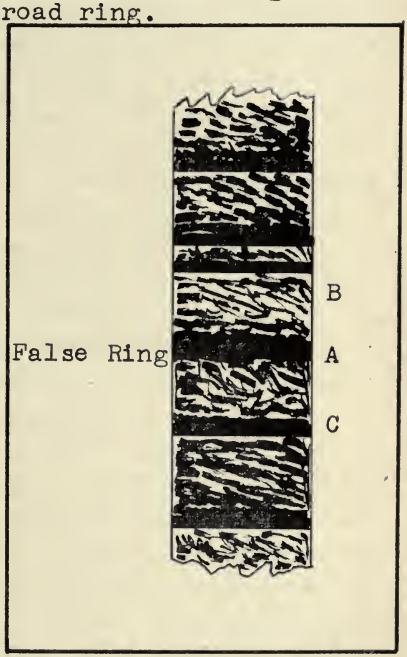


Fig. 3. The band of dark colored wood labeled 'A' was formed during the growing season and not at its end. 'B' is early growth or spring wood. 'C' is late growth or summer wood for the same ring.

terrace to local geological events. Much has been done to identify terraces by index fossils, degree of dissection, decomposition of boulders and depth of weathering of the terrace material. The terraces can then be associated with glaciation features of the Pleistocene. This method can not, of course, give an absolute date since the exact date of man's leaving the artifacts in the deposit and the date of the formation of the deposit may vary by thousands of years.

In almost every archeological site the stratigraphic-geomorphic method is one of the first methods employed. Many unique relative chronologies, based on this method, have been worked out by competent authorities for given areas (Heizer, 1953, p. 7). In some cases it is the only method available and can, at least, be considered a good working theory for future excavations.

Conclusion:

The stratigraphic-geomorphic method is based on the correlation of man's remains with known geological features and thereby indirectly attaching these remains with some known relative dates for a whole area. This writer feels that this method has proved very useful, especially in North America, and Europe.

Varve Analysis

The word "varve" comes from the Swedish meaning "layers". In geology the term refers to the silt deposits laid down annually in a lake or any body of still water. The varve method of dating is one of the earliest geochronological methods, having been conceived by Baron Gerard de Geer (Zeuner, 1952, p. 20).

The principles of this method rest on knowing something about the formation of varves, their composition and thickness. Varved clays were and still are formed where glaciers discharge their meltwater into still water. The still water may be a lake caused by a terminal moraine built by the ice at an earlier stage, or it may be a bay or even a comparatively quiet river. As the meltwater leaves the glacier and enters still water, its velocity is reduced to zero. Since the amount of sediment that moving water can carry depends upon the water's velocity and the size of the particles, it is obvious that the

sediment in the meltwater immediately settles out in the still water. The large, coarse particles settle first, followed by the fine particles. When winter approaches and ice forms on the still water, this process is halted until the next spring when again the same pattern is followed. The result of this physical process is a regular sequence of annual varves. These varves are as conspicuous as growth-rings of trees, owing to the change of color accompanying the change in size of the sediment (Zeuner, 1952, p. 21). The composition of varves is usually small grains, but occasionally large pebbles can be observed. The thickness of varves range from a few millimeters to a few centimeters, with a few exceptions of as much as 40 centimeters. Because varves demand still water for their composition, they are invariably connected with some type of moraine. As the ice-margin retreated, the varves followed it and, assuming a northward retreat, each succeeding varve is found to begin farthed northward than the preceding one (Zeuner, 1952, p. 23). If the retreat was interrupted by a stationary phase or brief advance, a new moraine was formed. There is, for certain regions, notably in Finland, an overlapping of sections which indicate that the top varves of one lake are the same as the bottom varves of another. This overlapping is similar, in its use, to the method of dendrochronology.

Originally, the method was one of smoothing the surfaces of a cross-section of varves and transferring the thickness of the varves to long thin strips of paper. By correlating the thickness of varves or varve groups from the strips, a long series of related varves could be identified. These techniques are very similar to those in dendrochronology. Later other methods were devised based on characteristics of varves other than their thickness. The physical properties to be considered must be the primary properties such as color of the sediment, coarseness of grain and hygroscopicity (ability to attract water), plasticity and arrangement of grains. Secondary properties, due to weathering or the action of ground water, have to be ignored. This information is plotted on paper in the same way that tree-rings are. (See Fig. 1 in dendrochronology). By connecting the top ends of the thickness lines, a type of curve is formed which is easy to read and understand. Prior to the

1930's, all of these plots and curves were hanging in space since there were no absolute dates to attach to the last varve. At that time Liden found postglacial varves which continued into recent deposits. From these varves he determined that the arbitrary zero that had been assigned had an absolute date of 6839 B. C. (Zeuner, 1953, p. 26). This date then, marks the beginning of the Postglacial. The varve work has been done mostly in Scandinavia and Finland and much cross-dating and charting has been compiled. This method has supposedly given a way to date the deposits of the last 10,000 to 15,000 years (Zeuner, 1952, p. 29).

To archeology, the varve analysis method is an indirect method of dating, since no cultural remains of man have been found imbedded in the varves. Varve analysis can be used in conjunction with pollen analysis or any method that establishes what the climate was when a particular artifact was made or in use. The other methods will establish the climate and, since the varves were laid down because of those climatic conditions, the artifacts can then be linked to a certain group of varves and, therefore, can be dated. To American archeology there is little use, as of now, for the European varve charts. But recently work has been done here (in New York) with varves and a series of charts formed (in McCurdy, "Early Man", pp. 163-172). The drawback in America is the lack of an area that will serve to establish an absolute date for the arbitrary zero. Some attempts have been made to link our varve charts with those of Europe. I doubt if this will be too successful, owing to the difficulties of possible sediment differences between North America and Northern Europe. Also affecting this is the still unanswered question of whether or not the advances and retreats of the glaciers of North America were synchronized with those of Europe.

Conclusion:

The varve analysis method depends on the fact that annual varves were laid down by the meltwater from glaciers during their retreating phases. By correlating the thickness and other physical characteristics of the varves, a dated sequence can be built up for the glaciated areas. I hope that North American dates can be somehow tied to those of Europe to give a

world-wide method of dating the past 10,000 years at least. The question in my mind is whether each varve in every case indicates one year's deposit (analogous to false rings in dendrochronology). Even if the varves were not an annual affair, the method still seems to me to be an excellent way to give relative dates to archeological finds by the indirect process.

Shore-Line Method

The study of former shorelines and extinct lakes is one definite job for the geologist. By studying the strand lines, which mark the post levels of lakes or seas, and relating them to local or world-wide geologic phenomena, the geologists have formed relative dates for the changes that have taken place. Geologists have set forth two principle causes for the changes in area and geographical position of former or present lakes and seas. Glacial eustasy is one which attributes rising levels of the seas to the excess water available when glaciers melted. Isostasy pertains to the lifting of land as the weight on it by the glaciers was reduced due to the melting and retreating of these glaciers.

If some other archeological dating method establishes a date, either absolute or relative, for the strand lines, any archeological material that is associated with these strand lines is assumed to have the same date. The drawback here is that no proof exists that the cultural group didn't occupy the site long after the strand line was established. Allison has traced the history of Lake Bonneville and Lake Lakontan and the formation of caves in the Oregon area. After checking the stages of the lake and the eruption of the Newberry volcano, he was able to arrive at a date of 11,000 to 12,000 years for the artifacts found in the cave (Allison, 1946, p. 65).

This method can at best give only relative dates since we are not positive about the ages of the shoreline changes.

Rate of Stream-Channel Meandering

Running water is the most effective agent in the process of erosion. During geologic time, the surface of the earth has been subjected to degradation by streams and rivers. Geologists usually define rivers in time terms of youth, maturity and old age. With these terms are associated many well known features such as meanders. Meanders are broad loops formed

by a mature or old river. Rivers such as the Missouri, Mississpi and Ohio are mature and old rivers that illustrate well defined meanders. From areial photographs it is possible to see these loops as they zig-zag across the countryside.

The application of river meanders to dating is based on knowing the approximate rate of meander progression for any river. A study of the Mississippi, below Cairo, Illinois, is used here for an example since the rate of meander formation has been recorded from observations made since 1765. With the aid of aerial photos and contour maps, geologists have been able to trace the changes in the meanders of the Mississippi (Sculley, 1953, p. 85). Fisk has determined 35 stages during development of the river in the last 4,000 years. Each meander is given a number or letter designating a chronological significance. Channel 20 exists today and each meander, going back in time, is considered to represent approximately 100 years. Thus, channel 1 is approximately 2,000 years old. This sequence of 1-20 represents the time after the Ohio and Mississippi joined near Cairo, Illinois. Previous to this the channels are designated by the letters A through J to indicate the sequence of channels during the 2,000 years before the rivers joined. The stages A through J are unequal in time and obviously span more than 100 years each.

This meander method is limited to the Mississippi River alluvial valley because it is only in this part of the Mississippi, or any other North American river, that broad, definable meanders are present. Another limitation is involved in the plotting of oxbow lakes as a part of the original channel. Since some oxbow lakes may exist for 7,000 years, a culture could have fourished from 300-400 years after the channel changed (Sculley, 1952, p. 89). There is always the possibility that a late cultural group might have settled along the oldest channel.

In using this method, archeologists locate a site on one of the meander maps. Then, assuming that aboriginal groups lived near rivers or other water sources, he can tell which meander the group was associated with and, therefore, secure an approximate date for occupancy of the site. The importance to the archeologist rests in the fact that this method shows promise of being of fundamental aid in setting the prehistory

of North America in a relative chronological frame. From this, it will probably be possible to extend the dates of cultural assemblages in the Mississippi alluvial valley to other archeological sites that are completely in the dark as to chronological order.

Conclusion:

Mature and old rivers form meanders, which are continually changing. By determining the approximate rate of change and the location of old meanders, it should be possible to date archeological sites which occur in the immediate vicinity of the Mississippi river. This would be possible, if the assumption is true that man has always been in search of a good water supply and has located himself accordingly. This writer feels that this is a fairly logical assumption and that the only problem would be to ascertain exact dates that could be attached to each other.

Geological Processes With Determinable Time Rates

There are many geological processes that can have rates of time determined for their evolution. At this point, I will merely list and comment briefly upon them, since they are only local methods and offer no prospect of becoming world-wide in their application.

a. Rate of Dune Migration
b. Rate of Travertine Deposition
c. Rate of Delta Building
d. Rate of Cliff Erosion by Water Sources
e. Depth of Leached and Oxidized Zones in Glacial Deposits.

a. The rate of dune migration was used by Strong to date certain deposits in the area around Signal Butte, Nebraska (Strong, 1935, pp. 236-239). It is an involved process and too many drawbacks tend to put the method in an obsolescent category.

b. Travertine deposition has been used in isolated areas by Allison to date the antiquity of caves and their deposits (Allison, 1923). This method contains numerous assumptions that need clarification. In many areas that contain caves this method may offer relative dating.

c. The rate of river delta building to gain time estimates

has been applied to Bear River, British Columbia; the Fraser River, B. C.; the Nile River, Egypt and the Muota River, Switzerland (Heizer, 1953, p. 14). At best, a relative dating method.

d. The retreat of a cliff along a lake or river could possibly be used to date strata and indirectly, archeological material. The works of water are too varied to be of use in estimating the time that a cliff has been eroded.

e. The depth of the leached and oxidized zones in glacial deposits (till, gravel, loess) in Iowa have been studied. Since the resulting dates were derived with the aid of the Niagara recession theory, they are to be questioned (Heizer, 1953, p. 14).

Conclusion:

All of these methods are of some slight use when treated as working theories. None offer a direct association of man's remains with the studies made. In view of this I would treat all with some coldness.

B) PEDOLOGICAL METHODS

Pedology

Pedology is that realm of science which has as its objective the elucidation of the natural laws governing the origin, formation and distribution of soils (Joffe, 1949, p. vii). It is possible to extract a relative chronology from the study of soils by computing the rate of formation and development or weathering or by inferring from the position and nature of the soil, the climatic conditions under which it was formed and, through this, arriving at a date by correlation with the otherwise established climatic sequence (Heizer 1953, p. 17).

Soils are known to be formed primarily by the processes of weathering. In the cycle of weathering, a series of physical and chemical agents are responsible for the transmutations that take place in the rocks and minerals. These agents have been carefully studied and facts determined regarding their ability to change the face of the earth. The results of these competent agents, that are responsible for rock weathering, have been observed and soil profiles have been established to aid in the interpretation of pedology. These profiles are defined as "genetically related exposed horizons of a vertical cut in the

soil body, taken as a unit" (Joffe, 1949, p. 8). Layers are studied by dissecting and reading the thickness, color, compactness, cementation, porosity, consistency, plasticity, stickiness, texture and volume weight. The layers are grouped into zones, depending upon the above characteristics, and these zones are related to the primary factor of soil development—climatic conditions. Much of the earth's surface has been studied and classified by noted pedologists.

One of the important aspects of pedology, which is of interest to archeological dating, is the time factor. Many men have attempted to determine a constant rate of time for soil development. These rates were determined by studying some of mans' works and comparing the disintegration of exposed surfaces with the original composition. This work has yielded many dates for certain areas, but is not accepted by many critics (Zeuner, 1952, p. 351).

As an archeologist cuts through the soil in search of archeological material, he is aware of the soil layers. His first job is to record the soil profile with photography and careful drawing. Then by submitting samples of the soil along with the recorded material to a pedologist for investigation, the archeologist may be able to know the climatic conditions that prevailed when the soil was developed. By comparing the results with known climatic changes, the archeologist has another relative dating tool.

Conclusion:

If it were possible to determine accurately the rate of soil formation, and assuming that conditions that were present during the history of soil formation are known, the method of pedology would be an important aid to archeological dating. I can see that much work has been done along these lines, but that the only chronology that has been developed is relative. My suggestion is that archeology create its own branch of 'paleopedology' to study its own problems. Until this is done I can only see the use of pedology as a helping-tool method.

C) CHEMICAL METHODS

1) Calcium-Phosphate-Carbonate analysis
2) Fluorine dating of bone
3) Rock weathering and flint patination

Calcium-Phosphate-Carbonate Analysis

Chemical methods of bone age determination are based on some chemical change that occurs during the fossilization of bone which is independent of external conditions and, therefore, always proceeds at the same rate regardless of where the bone is located (Cook & Heizer, 1953, p. 335). The primary constituents of bone are inorganic and organic matter. The basic principle here involves finding the percentage by weight increase of calcium, phosphate and carbonate (CPC) due to the progressive loss of the organic material while the fossilization process is taking place. What has been done so far by S. F. Cook indicates that only relative dating can be derived from this method. The exchange of CPC ions with the surrounding environment is apparently a continuous process. Because of the diversity of the environments, the method can only be used to date bones relative to each other in a given area (Cook, 1951, p. 279).

One drawback to CPC analysis is the determination of the environment which has existed immediate to the bone for any length of time. Allied to this is the difficulty of knowing, yet, the precise processes involved in the fossilization of bone.

Archeology can use this method because of its direct application to man's skeletal remains. Also important is its use to date animal bones which, in turn, may give absolute dates for artifacts associated with them.

I feel that this method is worthy of future investigation, but that it never will establish a world-wide absolute dating system.

Fluorine Dating of Bone

Fluorine dating rests on the known formation of fluorapatite in bones (Cook, 1951a, p. 78). This stable mineral is resistant to weathering, leaching and other alteration. The formation of fluorapatite is due to the affinity of the fluoride ion for bone. The fluoride ion enters the hydroxapatite crystal and replaces the hydroxyl group, thus forming the very stable compound fluorapatite. One man demonstrated that this accumulation was a function of time and, therefore, the assumtion was laid down that fluorine dating could give absolute dates. But the drawbacks to this method are similar to the

CPC method. The major drawback involves the known differences in the quantity of the fluoride ions available in the ground water between any two geographical locations. This method is still of some use in the relative dating of bones in any single area after the fluoride content of the ground water has been determined.

Rock Weathering and Flint Patination

Some geologic age determination involving rock weathering has been worked out by a man named Matthes. This was applied by Schofield in 1932 to arrive at dates for the age of some Bushman rock paintings in South Africa (Heizer, 1953, p. 20). The method apparently rests on calculating the rate of weathering for particular types of rock formations. The only serious drawback that I can see would be the lack of proof that weathering is a fairly constant process for any area. Many types of rock could be encountered in a single area which would involve a complex mathematical determination of the mean weathering rate.

Flint patination (surface oxidation due to organisms or weather—Example: when oxidized, copper forms a green protective layer of cupric oxide) of tools and material used by man has been used to some success by Rogers in California (Rogers, 1939, p. 19-22). In this report he says: "Although the process of patination and oxidation are understood only to a certain degree, and practically nothing is known about the rate of progress, the phenomena when properly used can be of aid in establishing an implement-sequence in localized fields." (Rogers, 1939, p. 19).

As has been pointed out, the methods of weathering and patination can only be used for relative dating, but, with increased work in the field of climatic conditions through the Pleistocene, it is possible that new factors will be uncovered that could put these methods into useful operation anywhere that stone tools are found.

D) RADIOACTIVITY METHODS

1) Radium Method
2) Carbon-14 Method

Radium Method

The radium method of age determination has little, if any, direct application to archeology. It is discussed here, briefly, because of some bearing upon the dating of geologic eras which in turn involve the Pleistocene. This method can determine the age of sediments in which archeological remains may occur or aid in the erection of a world-wide Pleistocene and postglacial chronology. This will enable the archeologists to date those finds which occur in certain geologic contexts (Heizer, 1953, p. 17).

The radium method is similar to the Carbon-14 method in that it depends upon the known rate of disintegration of uranium to radium to lead. All radioactive methods depend upon this basic priciple of disintegration. The difference between the carbon-14 method and the radium method lies in the fact that the uranium and radium give off helium in the process of decomposition and are finally converted into stable lead, whereas the carbon-14 at some time completely disappears. It is the ratio of lead or helium present that determines the age since crystallization. Knowing the half-life of the uranium-radium-lead process is much more complex than the carbin-14 process because the uranium goes through a number of stages before arriving at stable lead.

The use of this method in archeology has been discussed. There are many articles written on the radioactive minerals and their use to archeology. The scope of this paper does not allow time or space for a complete discussion of this complex method. This writer feels that the work already done is just the beginning of a new field in archeological dating.

Carbon-14 Method

The most promising method of absolute dating, at present, is known as the carbon-14 dating method. Dr. Libby's discovery of the C-14 method of age determination was one of the most important scientific discoveries in the past decade. What the archeologists needed was a method for dating that started with the present and that could go back through the last tens of thousands of years. Particularly important for the archeologist was the criterion that the method use some element commonly found in, or associated with, artifacts. These require-

ments have been met by the C-14 method. This dating is possible on the basis of the present day C-14 content of living matter and the known half-life (5568 + or − 30 years) of the radioactive isotopes of carbon. By applying this known rate of disintegration to the amount of C-14 remaining in an archeological object, the archeologist can determine an approximate absolute date for the find.

To understand the delicate methodology of C-14 dating, it is necessary to cover briefly the ideas involving the formation of C-14. This radioactive isotope is formed in the upper atmosphere where cosmic rays produce neutrons which react with nitrogen to form radiocarbon (Kulp, 1952, p. 250). The chemical formula for this reaction is:

$$\text{neutron} + N14 = \text{Proton} + C14$$

These C-14 isotopes combine to form carbon dioxide, much in the same manner as C-12 does. This carbon dioxide then finds its way into all types of organic life from surface ocean carbonate to animals who eat plants that photosynthesize the atmospheric carbon dioxide. All living matter contains C-14 in a constant proportion as long as it is alive and in exchange with the atmosphere. But when an organism dies, there is no further intake of C-14 and the C-14 present continues to disintegrate at a known rate, so that the amount remaining at any time is proportional to the time elapsed since death (Collier, 1951, p. 98). There are four basic assumptions underlying C-14 dating:

(1) Cosmic radiation has remained constant during the past 20,000 years or more;
(2) The reservoir of exchangeable carbon has remained constant;
(3) Carbon-14 is evenly distributed through the atmosphere and living matter as a result of a long-term process of mixing;
(4) It is possible to obtain ancient samples that are chemically unaltered with respect to their carbon content. (Collier, 1951, p. 99)

The first two assumptions were, in part, proved by checking the method against samples of known age. The third assumtion was confirmed by Libby through a world-wide assay. The

fourth was checked against samples of known age, after proper procedures for handling were devised and applied (Collier, 1951, p. 99-100). See table (C-1) (Kulp, 1952, p. 262). From this data, it appears as though the C-14 method is the most accurate dating method now available.

TABLE (C-1)

Known Samples

Sample No.	Description	Known Age (Years)	Carbon-14 Age (Years)
L-123C	Inca Temple	444 + or — 25	450 + or — 150
L-108A	Sequoia Tree-ring	880 + or — 15	930 + or — 100
L-108B	Sequoia Tree-ring	1,377 + or — 4	1,430 + or — 150
C-62	Mummy Coffin Egypt	2,280 + or — 5	2,190 + or — 450
C-81	Funerary Ship, Sesostris Tomb	3,750 + or — 10	3,620 + or — 180
C-12	Cypress Beam, Snerferu Tomb	4,575 +or — 75	4,802 + or — 210

The technique is complex, but in general the following procedure is observed. After cleaning the sample, all of the carbon is converted to carbon dioxide by burning (oxidation). Then the carbon dioxide is purified until the only material left is pure carbon dioxide containing the isotopes of carbon. This pure carbon dioxide is placed in contact with hot magnesium, which absorbs the oxygen, leaving magnesium, magnesium oxide, and carbon in elementary form. Acid and water are then used to remove the metal and oxide, leaving a pure sample of carbon ready to be counted. The counting means measuring the radioactivity of the sample and this is done by an instrument similar to a Geiger counter. The sample is put in a counter which is shielded from outside radiation by thick layers of lead and iron. Counts are taken for a given period of time and the count per minute per gram calculated. These results are then applied to a half-life formula to give the age of the material that originally possessed the radioactive carbon (Long, 1952, p. 2).

The amount of material needed for testing depends upon the amount of carbon normally present. For example, charcoal is high in carbon content while shell is low. Libby gives tables in his book which tell the archeologist what amounts of cer-

tain archeological items are needed to make satisfactory tests.

There are drawbacks to this method which involve, for the most part, the apparatus used in the laboratory. Since the approximate cost of rough-dating equipment is $5,000 to $7,000, it will be some time until most of the minor problems are solved and, therefore, the accuracy improved. The errors that appear in dates are attributed to the age of the material and also to the length of time allowed for counting (Heizer, 1953, p. 15). The loss of museum material must also be taken into consideration. Once the article is burned there is no way to restore its original form. In some cases this may be a serious drawback involving controversies as to the worth of C-14 method for some archeological materials. Another drawback to the method is that it can not be used in the field because of the complex equipment and exacting chemical work involved. The archeologist must follow the procedure of packing and shipping to insure safe arrival at a laboratory equipped for C-14 dating.

The dates that are assigned to material will help the archeologist understand more thoroughly the Mesolithic, Neolithic and Bronze age. Table (C-2) gives some of the dates arrived at by the C-14 method. Table (C-2) (Kulp, 1952, p. 263).

TABLE (C-2)

Archeological Samples

Sample No.	Description	Age (yrs. before now)
L-113	Mayan lintel with carved date	1470 + or — 120
C-576	Isaiah manuscript	1920 + or — 200
C-602	Stonehenge, England, late Neolithic	3800 + or — 275
L-134	Tunisia, early Neolithic	8400 + or — 400
C-524	Belt Cave, Iran, Mesolithic	10,560 + or — 1 200
C-579	France, Upper Paleolithic	13,000 + or — 560
C-406	Lascaux Cave	15,500 + or — 900
C-428	Oregon Sandals	9050 + or — 350
L-129	Stomach contents of extinct Moa, New Zealand	1800 + or — 150
L-127	Superbison flesh and hair, Alaska	Older than 28,000
L-104A	Signal Butte I Horizon, top	2950 + or — 200
L-104B	Signal Butte I Horizon, bottom	3440 + or — 120

Conclusion:

The radio-carbon dating method is based upon the half-life

of carbon-14. Since the basic assumptions seem to be born out in laboratory tests, this would be our best method of attaching absolute dates to archeological finds. This writer feels that this method is just the beginning in the field of radioactive dating. Soon there will be other methods devised that will be more accurate and even more flexible. If the process were not so costly, I would like to see radio-carbon stations in various archeological areas to speed dating in the hope of reducing the problems of contamination.

E) GEOPHYSICAL METHODS

1) Paleomagnetism
2) Volcanology
3) Seismology

Paleomagnetism—Volcanology—Seismology

Three methods of archeological dating employing geophysics are grouped here and briefly covered because of the lack of material available to me regarding their uses to the dating problem.

Paleomagnetism has been used to date pottery by studying the orientation of magnetic particles that are locked in upon firing of the clay. Archeologists have seen the possibility of dating ceramic specimens by determining the orientation of magnetic particles and identifying the date with reference to a graph of the periodic curve of the inclination of the earth's magnetic field. This method, I feel, has little use, since there are too many complicating factors involved. One that destroys much of this theory, except in rare cases, is that the original position when the pottery was fired, must be known. Also the fact that the reheating of a vessel will destroy the original orientation of magnetic particles has to be taken into consideration. I will only say that the method has been attempted.

Volcanology, which is the scientific study of volcanoes and volcanic phenomena, seems to have some direct use when the dates of eruptions are known. A volcanic eruption may deposit lava or pumice over archeological deposits. (I think of what an archeologist of the future will determine at Paricutin, Mexico — but supposedly will know that the volcanoe started in February, 1945). Since lava and pumice from different erup-

tions usually have varying characteristics, it is possible to identify the origin of the material. Dating by this could only be relative, since absolute dates for ancient eruptions are not known. In isolated cases this method may give the only means of some relative dating and is, therefore, interesting and useful.

Seismology is the study of earthquakes and it, too, has been proposed as a method to determine the chronological ordering of archeological material. The effect of earthquakes on man and his remains is probably determinable. I am of the opinion that this method, if of any value, is strictly relative, since knowing the dates of these earthquakes is highly improbable.

F) ARTIFACT SEQUENCE DATING

Sequence dating is relative dating by relation to things earlier and later in arbitrary units. The dating of artifacts by this method combines two well established principles. The first is a fundamental law of superposition which states that in unaltered geologic areas, the bottom strata must have been deposited first and that they form, therefore, the oldest part of an area. The strata above become younger and younger relative to the bottom strata (Hussey, 1944, p. 37). The second principle involves theories laid down by anthropology. It states that man's artifacts are continually changing and becoming more complex, both technologically and aesthetically. This is analogous to the automobile industry where a comparison can be made between the 1921 and 1954 Chevrolets. With these basic concepts in mind, an archeologist can place man's remains in some chronological order. The method of sequence dating can use either one of the basic principles or a combination of the two.

The literature covering sequence dating is voluminous and in almost every detailed archeological report reference is made to the methods employed to date by sequence such things as arrow heads, pottery, metal tools, baskets and articles of cloth. To illustrate sequence dating I have chosen the general method used in pottery dating. With pottery, the archeologist is fortunate because, if the culture group knew the art of ceramics, there will always be some objects or pieces available. Many pieces of pottery are gathered and cleaned to help in the

problem of piecing them together. There are four distinct aspects taken into consideration when the actual work of classification is begun. These are: (1) paste (2) surface finish (3) decoration (4) form. From this each principle type is distinguished and assigned a number somewhere between one and ninety-nine depending upon its complexity. Lesser variations of each type are assigned lower case letters. Thus every piece of pottery and/or its photograph can be classed (B 17 d=black pottery, type 17, variety d). Usually drawings and photographs from a particular site are assembled with the idea of using them for correlation with other established or future sites. Many related areas are compared in the hopes of establishing the diffusion of two cultures.

This method can, by an indirect process, also aid in establishing a relative group of dates for an infinite number of other artifacts. Any other artifacts found with the pottery are, of course, made note of and are assumed to match the pottery in age. A pottery sequence, aided by C-14 dating, could set up the dating of an archeological site and all of its artifacts.

Conclusion:

Sequence dating of artifacts is based upon the fact that man's remains are changing from elementary forms to more complex forms. By studying the remains and determining the complexity of the forms, it is possible to establish a chronological order for the artifacts. This method must be used with some caution, however, for in instances an opposite process takes place with artifact types becoming less complex through time. As a relative dating tool, this method is important in that it can also be used to cross-date two cultures.

II. NATURAL SCIENCES

A) PALEOBOTANY

1) Dendrochronology
2) Palynology

Dendrochronology

Dendrochronology is the study of the annual growth-rings of trees. Its main purpose is the building of an absolute calendar to which archeological objects made of wood can be matched for exact dates. Tree-ring analysis was conceived by Doug-

lass in 1901 in connection with his interest in sun-spots and climatic changes (Glock, 1934, p. 501). Not until 1911 was its application to archeology realized.

Tree-ring analysis is based on the fact that trees have a particular structural feature, namely annual growth-rings. Each year, in the spring, trees awaken suddenly from the winter slumber and growth is very rapid. The wood thus formed is light colored and porus. As summer advances, the growth gradually tapers off and the light colored wood merges into a band which is darker and much more dense. When winter sets in, the tree suddenly stops growing and a sharp line marks the outside boundary of the wood that was put down during the spring and summer. This annual ring consists of light colored wood, dark colored wood and a sharp line on each side. The growth of a tree varies because of heredity, amount and kind of soil and mineral food that is available to the tree, amount of sunlight and water it receives, temperature and humidity, and the tree's exposure to winds, fires, pests and disease. The tree's heredity is a factor it shares with other trees of a given locality. The soil remains relatively constant year after year. The effects of winds, fires, pests and diseases are local and can be ruled out of the study of groups of trees. Therefore, the principle causes of the variations in ring growth within a tree are climatic factors, such as temperature, moisture, sunlight and solar radiation. (Stallings, 1939, p. 5). Trees of one area tend to exhibit similar variations in their ring-records. Thus, the basis of all tree-ring dating is founded on the cross-dating that exists among various trees which are growing during the same interval of time.

Samples have to be collected from thousands of living trees in a given area. The best sample would be a cross-sectional cut as near to the ground as possible. Other methods for taking samples have been devised, such as a special bore that extracts long, thin cores which are easily transported. These cores are only four millimeters in diameter and, therefore do little damage to a living tree (Giddings, 1941, p. 8). The samples are taken to a laboratory for examination. Here they are smoothed or treated with certain liquids to make the rings more visible. The rings are counted and read along the radius

of the tree and every tenth ring is pin-marked. It is the distance between the pin marks and the appearance of unusually thin or large rings that are most important in dendrochronology. The ring count is plotted on coordinate paper as shown in Fig. 1 (Zeuner, 1952, p. 9). After a number of these skeleton plots are constructed, the dendrochronologist will begin to cross-date them. This is merely a job of correlating the ring-series of one tree with those of other trees from the same area. Certain sequences of years are observable by comparing wide and narrow rings. The sequences of years is extended back in time by using large old trees, dead tree stumps and known building beams. After numerous skeleton plots are compared, a standard plot is formed which is typical of the region under investigation. How cross-dating is done and how a chronological sequence is built-up is shown in Fig. 2 (Zeuner, 1952, p. 10).

Within the work of reading tree-rings, there are some minor problems that may occur. One that crops up quite frequently is the "double" or "false" ring. Often, when counting the rings, it is found that eleven rings appear where only ten should have been found. This, upon closer observation, is determined to be a case of a false ring. One of the dark areas that was counted as a ring was not a true fall deposit at all. There must be a sharp dark line at the end of each year, indicating the time that the tree actually stopped growing for the year. The false ring indicates a normal start in the spring and then a mid-summer dry spell, followed by a wet period until actual winter conditions have again set in. Fig. 3 (Glock, 1934, p. 503) illustrates the false ring. A missing ring may occur also. This condition is discovered after much cross-dating and doesn't seriously hamper the work of cross-dating. At times small groups of specimens are not accurately set into the standard plot. These specimens are related to each other and and arbitrary zero is assigned to some one ring and the others are related accordingly. Such a sequence is known as a "relatively dated standard" (RDS) (Glock, 1934, p. 505). After some time and patience, the records are extended until the RDS is joined to the master plot. One famous gap, just prior to 1300 AD, was finally closed by material collected by

the National Geographical Society Expedition in 1929 (Glock, 1934, p. 505).

In the Southwest, the principle woods that have been used are ponderosa pine, Douglas fir and pinyon pine. These are types which grow in the lower parts of the mountain forests and which are also found most frequently in archeological sites (Stallings, 1939, p. 13). The pinyon is of most importance when dating firewood or small beams because of its small annual ring size. A small sample of firewood will contain many rings if the wood is pinyon. If it were part of a ponderosa there might, at best, be only five or six rings. Junipers, mesquite and cottonwood are of little value because of erratic growth habits and fast growing. Oaks and similar deciduous trees and conifers have been used successfully in other areas of the world (Stallings, 1939, p. 14). In Alaska, spruces and tamaracks have been used with great success (Giddings, 1941). Sequoia trees have been used primarily to establish a general climatic curve for the last 3,250 years, on which to base other archeological dating methods (Zeuner, 1952, p. 15).

In archeology there are many occasions to use dendrochronology. Systems have been devised to measure charcoal from a fire, roof beams of ancient structures and fragments of wooden tools. It is a matter of correlating the skeleton plot of an undated piece to the master chart for the given area. In this manner an almost absolute date can be determined for the age of the wood.

There are some difficulties encountered when dating ruins. People of past ages were not wasteful and hence they made use of some object for as long as it retained some usefulness. Many times a building beam is encountered that is twice as old as the other beams in the same structure. This can be explained as a case of man saving and building with a beam carefully salvaged from some other defunct structure (Zeuner, 1952, p. 14). When attaching dates to wooden objects it must be remembered that the date is for the death of the tree and not necessarily the date of use by man. An interesting theory has been presented by Deric O'Bryan. He suggests that most dendrochronological dates are wrong to some degree. He bases this on the "fact" that the Indians used old dead lumber for

building, since their tools did not offer them the best advantage over a living or drying tree (O'Bryan, 1949, p. 155). He suggests that dates already attached to archeological material by dendrochronology alone should be pushed up anywhere from at least two years to two hundred years.

Conclusion:

The basic idea of dendrochronology rests on the annual growth rings of a tree and by continuous work a master chart can be prepared for a locality. The archeological objects are matched against the master plot and their age can reasonably be determined in actual years. One important difficulty with this method has been that in areas where rainfall is abundant and consistent the growth rings are not significantly different and thus valueless for dating. This factor has limited the use use of dendrochronological dating in the United States almost entirely to the Southwest. Even in view of the drawbacks, this writer feels that dendrochronology is a very important method of dating archeological finds.

Palynology

Palynology is the study of pollen and its distribution. Possibly a better term to use in connection with dating is "paleopalynology or palynchronolgy". For this paper pollen analysis will do.

Pollen analysis is the microscopic study of pollen grains that are found in the strata of the earth. This science is based on the well known fact that during flowering time the plants shed huge quantities of pollen. This pollen settles to the earth to be imprisoned in strata during the processes of strata building. A single birch catkin may produce in excess of ten million pollen grains (Erdtman, 1943, p. 1). Pollen that settles on bogs, lakes and bays are deposited in the accumulating peat or ooze and preserved. Another important factor is that each tree species has a different type of pollen which, when viewed under a microscope, can be traced back to the parent tree. Each pollen grain has two protective coats which are resistant to decay, thereby eliminating the chance of losing identification of certain pollen grains. The purpose of pollen analysis is to establish a picture of changes in vegetation and climate during geologic time. By correlating this picture with known geologic

changes during the Pleistocene, it is possible to give relative dates to archeological sites.

The first step in pollen analysis is the collecting of pollen-bearing material. Many detailed methods are employed, but it is essentially a problem of getting a cross-section of the layers of material that contain pollen. Next, each layer of the material must be separated from the pollen grains within it. There are many methods used, depending upon the types of material encountered. Most of the material is separated by chemical processes which do not injure the pollen and which will separate all of the pollen from the "junk" with as little waste of time as possible. The pollen is identified and the number of each different type is recorded in order to establish the percentages of the types that are present. The resulting proportion in one of these layers indicates what type of plants predominate when the deposit was laid down; this in turn indicates the climate at that time and place. The predominance of spruce pollen indicates cold weather, and oak pollen indicates warm weather. There is a detailed series of forms and charts used to present the data in diagram form (Erdtman, 1943, pp. 152-170). A diagram consists of pollen frequencies marked off on the ordinates and the depth under the surface is indicated along the abscissa. Parallel with the diagram is a column representing the stratigraphy. Master diagrams have been constructed for many areas in the world. The pollen grains, as exhibited by the curves in a pollen diagram, are used as guide fossils to make stratigraphical correlation.

Certain physical features of plants that could be considered drawbacks to the method are: the production of pollen by a given plant; the weight of pollen grains which change the rate of sinking in air or water; and the dissemination of pollen by the wind. These drawbacks, although they affect in some way the results of the count, have been analyzed and determined and are not considered to be too hampering to the basic theory of a pollen count (Erdtman, 1943, p. 177). My opinion is that the reader take the results of pollen analyisis with a grain of salt because of the abundance of variables involved.

The use of pollen analysis in archeology is restricted mostly to relative dating. Archeological objects have be be carefully

handled so that a pollen count can be made of the strata immediately surrounding the object. From the count of pollen it can be determined what type of forests flourished and what type of climate was prevalent at that time. Then the strata can be cross-dated with other archeological sites and objects to give a hazy picture of the relative dates of the objects and events. Very seldom is an archeological object found in a richly impregnated pollen strata and, therefore, the immediate cleaning of an archeological object may destroy the chance of dating by palynology.

Conclusion:

As trees begin to flower each year they have pollen in great amounts. By making percentage counts of pollen in strata, the archeologist is able to determine the types of forests and climates that existed when some object was deposited. The drawbacks involved in the theory of pollen analysis puts the method in a reserve status to be used as a helping hand in dating archeological material.

B) PALEONTOLOGY
1) Vertebrate Paleontology
2) Micropaleontology
3) Conchology

Vertebrate Paleontology

Vertebrate paleontology is the study of the forms of animal life that exisited in former geological periods. This study depends primarily on the fossil remains of these animals that are taken from the earth's strata. From these fossil finds the paleontologists have assembled a vast amount of literature on the types of animals that have roamed the face of the earth. In order to understand man and his cultures, is is necessary to know as much as possible about his world as it existed through the Pleistocene. The fauna that man had to compete with for existence and for food are, if properly traced, a method of relative dating. One of the outstanding facts derived from paleontology is that all forms of life have been continually changing in form to match local or world-wide conditions. From the fossils of certain types of fauna that are still found today, the paleontologists have formed accurate charts to show the evol-

ution of these animals. The horse is a good example of the evolutionary process, when considering the change in size from the dog size of the Tertiary to the size of today.

Little can be said here for any method involving paleontology. In some cases it is a matter of transporting fossil finds back to a laboratory for classification. In other cases the finds are too massive to be hauled away and must be recorded and classified on the spot. The process must depend on keeping accurate records and photos of the location, in a geologic sense, and then an identification is possible. The important part of paleontology is the formation of a "paleontological clock" that can be used to give relative ages to the strata of the earth. This clock is based upon the idea that the lowest strata, in most places, is the oldest and the following layers above are relatively younger. Many areas of the world can be correlated by the method of index fossils. These index fossils are fauna that appeared as universals in the "Paleontological clocks" of different areas. By a continual process of cross reference paleonthologists are able to give a rather complete picture of the fauna and their development through time.

Archeology utilizes much of the information of paleontology by either the direct association of man's remains with the fauna's existence, such as the Folsom find (Roberts, 1937, p. 153-154), or by the indirect association of artifacts with local geologic strata. This can, in most instances, give only relative dates when used as the sole method of dating, since the exact ages of the stages of evolution in all animals is not known.

Conclusion:

Vertebrate paleontology, by studying former animal forms, can determine with reasonable accuracy, the climaee and general living conditions that existed during geologic time. Archeology profits from this study by correlating archeological finds with the evolutionary chart of certain fauna. There is yet much to do in determining the exast ages of fossil remains for each given area.

Micropaleontology

Micropaleontology is the study of microscopic fossil organisms (diatoms) that have lived in the past. This study can determine, with reasonable accuracy, the climatic changes that

have taken place in given areas. By comparing with other dating methods that involve climatic changes, this work can be useful in dating archeological finds.

The principles of micropaleontology useful to archeology are identical to those of vertebrate paleontology. By studying the microscopic life of the past and classifying it according to its physical changes, micropalenotology can take a sample from any strata and, if the specimen has microscopic life, determine what the climate was when the strata was laid down. At times, an interweaving of vertebrae paleontology and micropaleontology with man's remains can establish very reliable relative dates. By further connecting these results with some absolute dating method, such as C-14, it is possible to set up a framework of absolute dates that involve all three methods.

Archeologists must be careful not to lose any material immediately surrounding artifacts, as the microscopic analysis of this material might disclose diatoms that will be useful in dating the local strata.

Conclusion:

Since this study is a relative dating method, I place value on it only as a helping hand method. No find can be dated absolutely on the basis of micropaleontology alone.

Conchology

Conchology is the branch of zoology dealing with mollusks. From studying fossil remains of mollusks, it is possible to reconstruct the climatic and ecological conditions of the past. This is all based on the change in size, measurement of opening and the general form of mollusks due to change in habitat. During the past, before the glacial advances, there was a time of base levelling and the formation of many lakes and drainage streams (Baker, 1930, p. 470). As the glaciers advanced and retreated, the mollusks followed the same pattern of geological movement. Between each glaciation there was a complete return of life to the areas. This is evidenced by the shells of mollusks, bones of animals and parts of plants found in deposits between the till sheets. By observing and recording the changes of the mollusks, it is possible to determine the ecological and climate conditions of the past.

One interesting way to use this method of relative dating is

the investigation of man's shell heaps or refuse heaps. The types of shells found would indicate with what strata men had been associated and under what conditions he lived. Also possible is the dating of the culture when an absolute date is assigned to the strata or the shell. Conchology has aided in tracing man's trade objects and therefore relating two groups of prehistoric people.

Conclusion:

Conchology should be used as a supporting method and as a help in guarding against false assumptions pertaining to mollusks' remains as associated with man.

Conclusions About Archeological Dating Methods

Archeological dating is one of the most important tools of anthropology. Knowing the chronological order of man's remains is the first step in proving some of the present anthropological theories. Of the two types of dating, absolute dating is the most desirable. Relative dating has its merits. This is one way to determine the chronological order for man and his artifacts.

In general the problem of archeological dating can be reduced to a process of investigation in which the investigator is looking for some constant change that has taken place in some realm and then tries to fix a rate of time involved for the change to take place. By equating the present stage of the changing process with the rate of time needed to complete this stage, he arrives at the amount of timt that has elapsed since he process had begun. The important thing, then, is to link the change with man or his artifacts. Also pertinent would be the criterion that the process selected for study be one that man of the past has had no way of disrupting.

It is my opinion that the best method available at present is the carbon-14 method. Carbon-14 meets the requirements of the archeologist and produces absolute dates that seem reliable. In the paleobotany field I would select dendrochronology as one of the most stable methods. It may not reach back more than 3,000 years, but within that time it seems to be very accurate. Three other methods that appear strong in their usefulness to the problem are varve analysis, palynology and se-

quence dating. They have drawbacks that need understanding and solutions, but in general they seem well founded and organized. Most of the other methods seem to me to be only "helping hand" methods which are to be applied as any tool would be until it loses its usefulness. The important thing in dating is the use of as many methods as possible to insure accurate results.

REFERENCES CITED IN PAPER

ALLISON, I. A. 1946. "Early Man in Oregon." **Scientific Monthly,** vol. 62, pp. 63-65.

ALLISON, V. C. 1923. "The Growth of Stalagmites and Stalactites." **Journal of Geology,** vol. 31, pp. 106-125.

BAKER, F. C. 1930. "Influence of the Glacial Period in Changing the Character of the Molluscan Fauna of North America." **Ecology,** vol. 11, pp. 469-480.

COLLIER, D. 1951. "Carbon-14 Dating." In: **University of Michigan Anthropolicial Papers,** No. 8, pp. 97-101.

COOK, S. F. 1951a. "Chemical Analysis of Fossil Bone." In: **University of Michigan Anthropological Papers,** No. 8, pp. 73-84.

————. 1951b. "The Fossilization of Human Bones: Calcium Phosphate and Carbonate." **University of California Publications in American Archaeology and Ethnology,** vol. 40, pp. 263-280.

COOK, S. F. & HEIZER, R. F. 1953. "The Present Status of Chemical Methods for Dating Prehistoric Bone." **American Antiquity,** vol. 18, pp. 354-358.

ERDTMAN, G. 1943, **An Introduction to Pollen Analysis.** Waltham, Mass: Chronica Botanica Co.

GIDDINGS, J. L. JR. 1941. "Dendrochronology in Northern Alaska." **University of Arizona Bulletin,** vol. 12, No. 4.

GLOCK, W. S. 1934. "The Language of Tree-Rings." **Scientific Monthly,** vol. 38, pp. 501-510.

HEIZER, R. F. 1953. "Long-Range Dating in Archeology." In Kroeber, A. L., Editor, "**Anthropology Today,** pp. 3-27. University of Chicago Press: 1953.

HOCKETT, C. F. 1953. "Linguistic Time-Perspective and Its Anthropological Uses." **International Journal of American Linguistics,** vol. 19, pp. 146-152.

HUSSEY, R. C. 1944. **Historical Geology.** New York: McGraw-Hill Book Co.

JOFFE, J. S. 1949. **Pedology.** Somerville, New Jersey: Somerset Press.

KROEBER, A. L. and others. 1953. **Anthropology Today. Chicago:** University of Chicago Press.

KULP, J. L. 1952. "The Carbon-14 Method of Age Determination." **Scientific Monthly,** vol. 75, pp. 259-267.

LEES, R. B. 1953. "The Basis of Glottochronology." **Language,** vol. 29, pp. 113-127.

LONG, A. 1952. "Radiocarbon Dating—The Method." **Carnegie Museum Archaeological Newsletter,** No. 6, pp. 1-5.

O'BRYAN, D. 1949. "Methods of Felling Trees and Tree-Ring Dating." **American Antiquity,** vol. 15, pp. 155-156.

ROBERTS, F. H. H. 1937. "The Folsom Problem in American Archaeology." In: MacCurdy, G. G., **Early Man,** pp. 153-162.

ROGERS, M. J. 1939. "Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas." **San Diego Museum Papers, No. 3.**

SCULLEY, E. G. 1953. "Extinct River Channels as a Method of Dating Archaeological Sites in Southeast Missouri." **The Missouri Archaelogist**, vol. 15, pp. 84-91.

SMILEY, T. L.; STUBBS, S. A.; & BANNISTER, B. 1953. "A Foundation for the Dating of Some Late Archaeological Sites in the Rio Grande Area, New Mexico." **University of Arizona Bulletin**, vol. 24, No. 3.

STALLINGS, W. S., Jr. 1939. "Dating Prehistoric Ruins by Tree-Rings." Laboratory of Anthropology, **General Series Bulletin**, No. 8.

SWADISH, M. 1953. "Archaeological and Linguistic Chronology of Indo-American Groups." **American Anthropologist**, vol. 55, pp. 349-352.

THORNBURY, W. D. 1954. **"Principles of Geomorphology."** New York: John Wiley & Sons, Inc.

WARREN, C. R. 1952. "On the Origin of Glaciers." **Scientific American**, vol. 187, pp. 57-59.

WEXLER, H. 1952. "Volcanoes and World Climates." **Scientific American**, vol. 186, pp. 74-80.

WILL, G. F. 1946. "Tree Ring Studies in North Dakota." **Bulletin of the North Dakota Agricultural College**, No 338.

WISSLER, C. 1943. "How Science Deciphers Man's Past." **Natural History**, vol. 51, pp. 120-34.

ZEUNER, F. E. 1952. **Dating the Past.** London: Methuem and Co. Ltd.

ADDITIONAL REFERENCES

BAKER, F. C. 1937. "Pleistocene Land and Fresh-Water Mollusca as Indicators of Time and Ecological Conditions." In: MacCurdy, G. G., **Early Man**, pp. 67-74.

BRUINERD, G. W. 1951. "The Place of Chronological Ordering in Archaeological Analysis." **American Antiquity**, vol. 16, pp. 301-312.

BURKITT, M. C. 1951. "Correlation of the Archeogical and Geological Records." **Nature**, vol. 168, pp. 509-510.

CHILDE, V. G. 1950. "Comparison of Archeological and Radiocarbon Dating." **Nature**, vol. 166, pp. 1068-1069.

COLBERT, E. H. 1937. "The Pleistocene Mammals of North America and Their Relations to Eurasian Forms." In: MacCurdy, G. G., **Early Man**, pp. 173-184.

COLLINS, H. B. 1953. "Radiocarbon Dating in the Arctic." **American Antiquity**, vol. 18, pp. 197-203.

CONGER, PAUS. 1942. "Diatoms from Lower Klamath Lake." **Carnegie Institute of Washington Publications**. No. 538, pp. 115-116.

COOK, S. F. & HEIZER, R. F. 1953. "Archaeological Dating by Chemical Analysis of Bone." **Southwestern Journal of Anthropology**, vol. 9, pp. 231-238.

————. 1951. "The Physical Analysis of Nine Indian Mounds of the Lower Sacramento Valley." **University of California Publications in American Archaeology and Ethnology**, vol. 40, pp. 281-312.

DEEVEY, E. S., Jr. 1943. "Additional Pollen Analysis From Southern New England." **American Journal of Science**, vol. 241, pp. 717-752.

———. 1944. "Pollen Analysis and History." **American Scientist,** vol. 32, pp. 39-53.

———. 1944. "Pollen Analysis and Mexican Archaeology: An Attempt to Apply the Method." **American Antiquity,** vol. 10, p. 135.

———. 1952. "Radiocarbon Dating." **Scientific American,** vol. 186, pp. 24-28.

DOUGLASS, A. E. 1933. "Tree Growth and Climatic Cycles." **Scientific Monthly,** vol. 77, pp. 481-495.

———. 1937. "Tree Rings and Chronology." **University of Arizona Bulletin,** vol. 8, No. 4.

EISELEY, L. C. 1939. "Pollen Analysis and Its Bearing Upon American Prehistory: A Critique." **American Antiquity,** vol. 5, pp. 115-139.

FORD, J. A. 1952. "Mound Builders of the Mississippi." **Scientific American,** vol. 186, pp. 23-27.

GEER, G. de, 1928. "Geochronology as Based on Solar Radiation and Its Relation to Archeology." **Annual Report of the Smithsonian Institution,** pp. 687-696.

GLADWIN, H. S. 1940. "Tree Ring Analysis—Methods of Correlation." **Medallion Papers—28.**

———. 1944. "Tree Ring Analysis—Problems of Dating I. The Medicine Valley Sites." **Medallion Papers—32.**

———. 1946. "Tree Ring Analysis—Problems of Dating II. The Tusayan Ruin." **Medallion Papers—36.**

GODWIN, H. 1948. "The Principles and Practise of Pollen Analysis." **Advancement of Science.** vol. 4, pp. 337.

INTERNATIONAL MUSEUMS OFFICE. 1940. **"Manuel on the Technique of Archaeological Excavations.** Paris: International Institute of Intellectual Co-operation.

JOHNSON, F. 1951. "Radiocarbon Dating." **American Antiquity,** vol. 17, No. 1, part 2.

JUDD, N. M. 1946. "The Rising Quality of New World Archeology." **Science Monthly,** vol. 63, pp. 391-394.

KENYEN, Kathleen M. 1954. "Ancient Jericho." **Scientific American,** vol. 190, pp. 76-82.

LEIGHTON, M. M. 1937. "The Significance of Profiles of Weathering in Stratigraphic Archaeology." In: MacCurdy, G. G., **Early Man,** pp. 163-172.

LIBBY, W. F. 1952. **Radiocarbon Dating.** Chicago: University of Chicago Press.

LIBBY, W. F. & ANDERSON, E. C. 1949. "Age Determination by Radiocarbon Content: World Wide Assay of Natural Radiocarbon.." **Science,** vol. 109, pp. 227-228.

MacCURDY, G. G.. ed. 1937. **Early Man.** New York: J. B. Lippincott Co.

MARCH, B. 1934. "Standard of Pottery Description." **Occasional Contribution From the Museum of Anthropology of the University of Michigan,** No. 3.

MERRILL. R. S. 1948. "A Progress Report on the Dating of Archaeological Sites by Means of Radioactive Elements." **American Antiquity,** vol. 13, pp. 281-286.

OAKLEY, K. 1948. "Fluorine and the Relative Dating on Bones." **Advancement of Science,** vol. 4, pp. 336-337.

PETRIE, W. M. 1918. "History in Tools." **Annual Report of the Smithsonian Institution,** pp. 563-572.

ROBERTS, F. H. H., JR. 1951. "The Carbon-14 Method of Age Determination." **Annual Report of the Smithsonian Institution,** pp. 335-349.

ROBINSON, 1951. "A Method for Chronologically Ordering Archaeological Deposits." **American Antiquity**, vol. 16, pp. 293-301.

ROGERS, A. F. 1924. "Mineralogy and Petrography of Fossil Bones." **Bulletin of the Geological Society of America**, vol. 35, pp. 535-556.

SEARS, P. B. 1937. "Pollen Analysis as an Aid in Dating Cultural Deposits in the United States." In: MacCurdy, G. G., **Early Man**, pp. 61-66.

SELLARDS, E. H. 1940. "Early Man in America." **Bulletin of the Geological Society of America**, vol. 51, pp. 373-432.

SIMPSON, G. G. 1953. **"Life of the Past (an introduction to paleontology."** New Haven: Yale University Press.

SOKOLOFF, V. P. 1952. "Geochemical Dating." **American Antiquity**, vol. 17, pp. 280-281.

STEENSBERG, A. 1951. "Archeological Dating of the Climatic Change in North Europe About A. D. 1300." **Nature**, vol. 168, pp. 672-674.

THORP, J. 1949. "Interrelations of Pleistocene Geology and Soil Science." **Bulletin of the Geological Society of America**, vol. 60, pp. 1517-1526.

VAN de WATER, M. 1953. "How Old is It?" **Science News Letter**, vol. 64, pp. 10-12.

WILLIAM H. 1952. "Geologic Observations on the Ancient Human Footprints Near Managua, Nicaragua." In: **Contributions to American Anthropology and History** by Carnegie Institution of Washington, vol. 11, pp. 5-31.

WOOLEY, C. L. 1931. **Digging Up the Past.** New York: Charles Scribner's Sons.

ZEUNER, F. E. 1950. "Dating the Past by Radioactive Carbon." **Nature**, vol. 166, pp. 756-757.

Interesting Wisconsin Specimens

SPIRALLY GROOVED AX

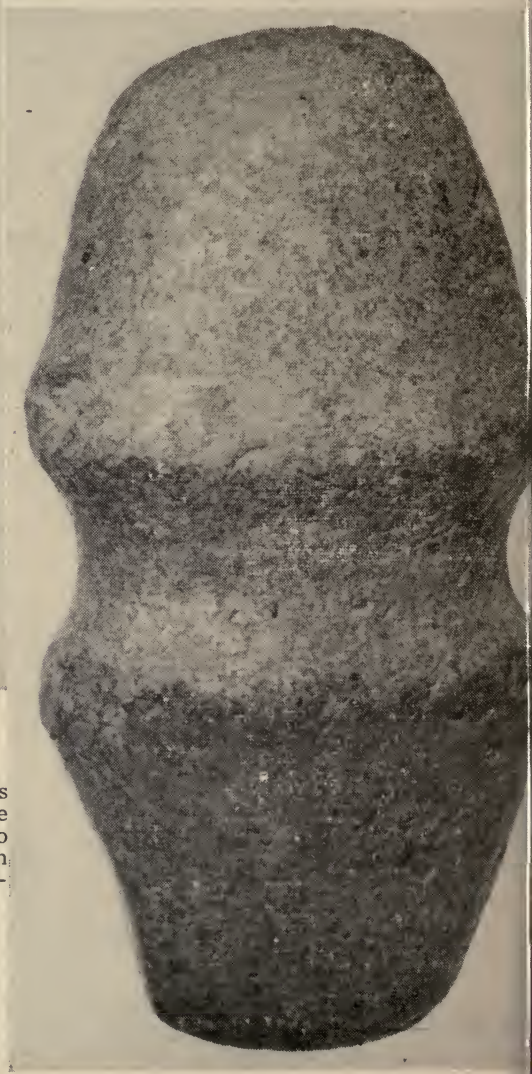
Dr. E. G. Bruder Collection

)f highly polished metamorphic rock this ax is inches in length. The unusual feature is the ɔving which spirals from a lower groove into upper one, so that two grooves appear on each ɜ. Found by Mr. See on his farm near Water- Waterloo Tnshp., Jefferson County.

DOUBLE-BITTED AX

Dr. E. G. Bruder Collection

This specimen is 4½ inches in length, of di grooved near the center with one shaft b slightly longer than the other. It was found farm in Section 21, Oakland Tnshp., Jeff County.



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THE WISCONSIN ARCHEOLOGIST

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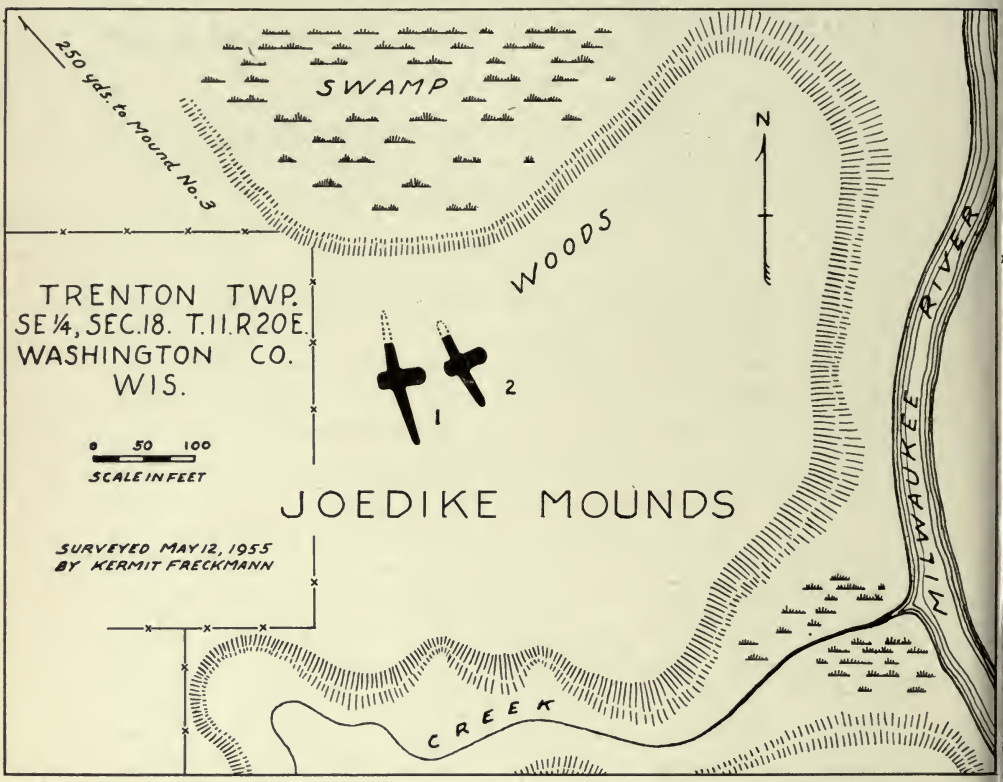
JOEDICKE BIRD MOUNDS

Kermit Freckmann

Some years ago, Mr. Phillip Schlegel of West Bend, Wisconsin, reported the existence of two bird effigy mounds located one mile east of West Bend and about one quarter mile north of the town road on the west bank of the Milwaukee River. Since then, the report was confirmed by Mr. Will C. McKern, Dr. Robert Ritzenthaler and the writer on a visit to the area in the summer of 1953. Not until May 12th, 1955, however, was an accurate survey of the group made. On that date Dr. Robert Ritzenthaler and Arthur Niehoff of the Milwaukee Public Museum and the writer surveyed the area located on the Louis Joedicke farm, S. E. ¼ of Sec. 18, Trenton Township, Washington County, Wisconsin. The mounds are located on a wooded peninsula of land extending from a plowed field to the west. This projection of high land is bordered on the north by a large swampy area, on the east by the Milwaukee River, and on the south by a creek tributary to the River. The mound area is well wooded pastureland and this condition may insure at least temporary preservation of the two Indian mounds.

Bird Effigy Mound Number 1

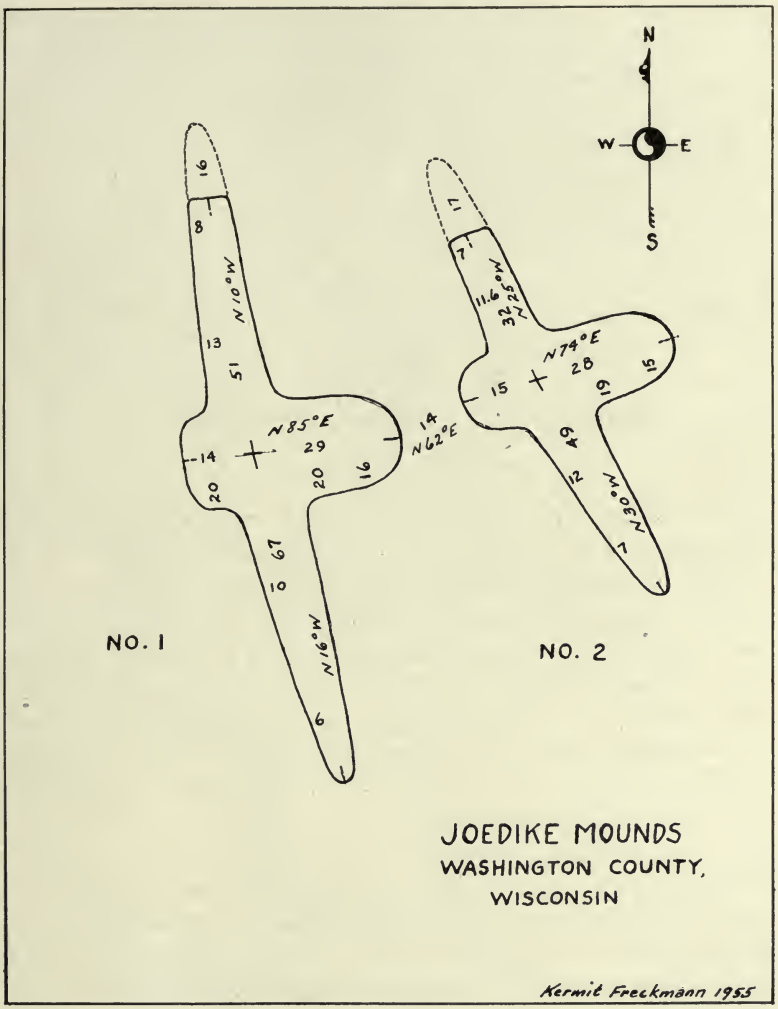
This bird mound has an overall length of 43 feet and a wing span of 134 feet of which 16 feet of the right wing tip was destroyed apparently by a cattle crossing. The body is 20 feet wide and presents a short squat head with a slightly elongated body. The wings average 12 feet wide near their juncture with the body and taper to about 3 feet wide near the tips. The entire mound is rather prominent having an overall height of 2 feet 6 inches at the shoulders and the wings are 14 inches high, 10 feet from the body. There is some indication of an early excavation having been made at the head of this



effigy. This perhaps caused the broad flat head that appears at the present time. No information was available regarding the excavation and it is assumed that this was done many years ago. The bird mound simulates flight in a westerly direction. The body axis is N. 85° E., the right wing extends N. 10° W. and the left wing is N. 16° W.

Bird Effigy Mound No. 2

This mound lies 14 feet northeast of Mound No. 1 and is similar in outline, but has a smaller wing span—98 feet. The right wing tip of 17 feet has also been destroyed by the same cattle crossing as in Mound No. 1. The body is almost identical in outline to Mound No. 1 being 43 feet in length and 19 feet wide. The axis of the body is N. 74° E., the right wing extends N. 25° W., and the left wing extends N. 30° W. The



entire effigy appears closely in flight behind Mound No. 1 and is directed west, southwest. It is slightly lower than its companion mound, being 2 feet high at the shoulders. Both mounds, with the exception of their right wing tips, are in a good state of preservation.

Conical Mound No. 3

Approximately 250 yards due northwest of the two bird mounds is a single conical mound on a high plateau of land.

This area was heavily wooded but at present the trees have been felled and the ground is being prepared for plowing, thereby assuring the destruction of this mound in a very short time. This conical at present is 16 feet in diameter and 2 feet high and was located by Arthur Niehoff while examining the area.

In conclusion it should be mentioned that although the future preservation of mounds 1 and 2 is fairly assured, the destruction of Mound 3 is imminent. A competent excavation of Mound 3 should be undertaken soon if any information regarding the contents is to be obtained.

JOHN MINK, OJIBWA INFORMANT

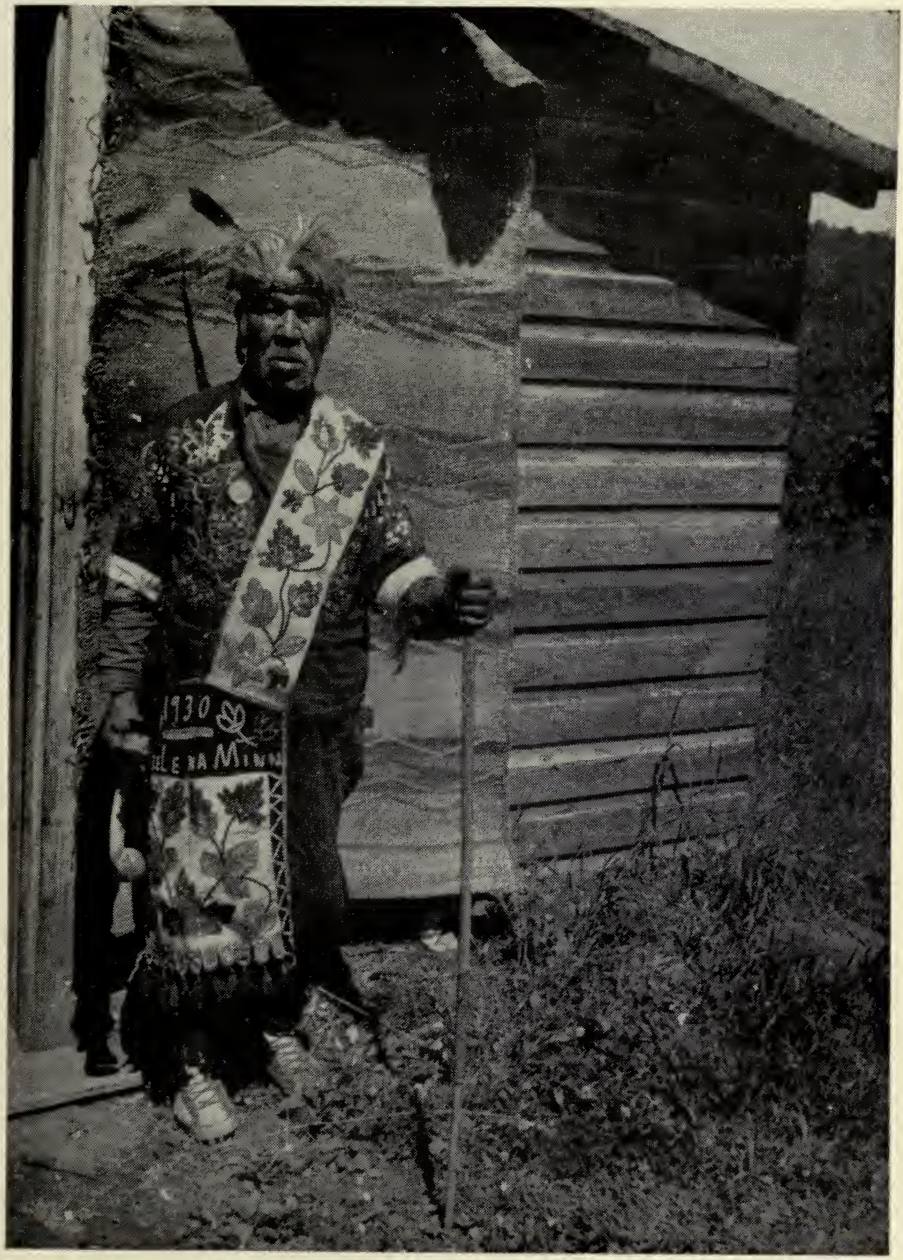
Joseph B. Casagrande

John Mink lived out his ninety-odd years in the relative obscurity of Lac Court Oreilles Indian Reservation in northwestern Wisconsin.* When he died a decade ago, few outside the pale of this "cultural fence" noted his passing; and few within it were left to mourn, for the old man had neither close kin nor progeny. No editorials were written to memorialize his death, no epitaph was carved on his gravestone, and he left no monument. Like countless others before him whose lives were lived outside the mainstream of history, he slipped unobtrusively into eternity.

Yet John Mink's death was more than the end of a man. He was one of the last of a lingering handful who followed a style of life ancient among the primitive hunting peoples of both the Old World and the New. As the spiritual leader of a small group of "pagans", themselves a minority group within the more acculturated Christian majority, he was well versed in the traditions and customs of Ojibwa life and no one was a wiser judge of men and their motives. Thus, his passing was not only the end of a life, but marked the end of a way

---

* The writer first met John Mink in the early summer of 1941 during the course of six months' field work among the Wisconsin Ojibwa. He is indebted to the Department of Anthropology of Columbia University for a grant which made this study possible. Special thanks are also due to my companion in the field, Dr. Robert E. Ritzenthaler of the Milwaukee Public Museum.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of life as well. Many who were close to him must have sensed this dual loss—and the bell has also tolled for us—but they are unlettered and mute. It is for them, and out of my own affection and respect for his memory that I wish to give John Mink brief respite from oblivion and such small taste of immortality as there may be in print.

* * *

The anthropologist who would study a preliterate people relies on both his own observations of customary behavior and on the oral statements of informants, for here the memories of men must serve as their archives and their books. However, if he is studying a vanishing culture such as that of the Ojibwa, observation of most aboriginal practices will be denied to him, and he must depend in large measure on the recollections of the very old. Unhappily, wisdom is not so constant a companion of the aged as is senility, and in the relatively small communities with which the anthropologist deals there will usually be few persons of advanced years both tempermentally and intellectually suited to the informant's role and who also understand the anthropologist's purpose and are sympathetic with it. Since anthropological field work is in essence a collaborative enterprise, its successful outcome depends not only upon the anthropologist's own skills but also upon the quality of his informants. Thus, the availability and choice of informants is crucial, and upon arrival at Lac Court Oreilles our first task was to determine who among the 1700 Ojibwa residing on the Reservation seemed best qualified for the role.

From the testimony of all of whom we inquired, Indian and White alike, it soon became evident that John Mink might be the paragon we sought. Some called him medicine-man, priest, friend; others called him sorcerer, pagan, scoundrel. Some regarded him with awe, others with disdain, but all agreed that his knowledge of the old days was unsurpassed. He was very old, we were told, somewhat infirm, and spoke no English, and he lived alone near the Couderay River in a house that he had occupied for more than half a century.

We found his weathered cabin on the southern slope of a small hill overlooking the river and followed the well-worn

path that led to the door. A hoarsely shouted, "Boju!" *, came in response to our knock and, somewhat apprehensively, we entered the single, barely furnished room. John Mink had another visitor, his good and trusted friend Prosper Guibord, who on this first of many occasions acted as interpreter and who in this capacity was to become an essential third party to our future conversations. Prosper had brought the Old Man a meal of wild rice and venison which he had finished eating, and when we arrived the two men were smoking kinnikinnick, a native tobacco made of toasted bark scrapings, whose fragrant smoke filled the room.

The size of the Old Man's reputation had ill-prepared us for his physical appearance. His large, almost massive head with its mat of unkempt grey hair dwarfed his stocky body and enfeebled legs which he supported with a walking-stick that lay propped against the cot on which he sat. His gnarled hand clutched a pipe, like a root growing around a stone. Squinting at us out of rheumy eyes, slack mouth held open to reveal a few stumps of teeth and head cocked slightly to one side as he listened, one had the impression that all sensory avenues to his brain had been dulled by his great age. His clothing—a worn wool shirt, faded outsize overalls and tennis shoes—lent him an almost pathetic air . . . like, I thought—and the image couldn't be repressed—that of an orang-utan, the old man of the forest, appearing at a carnival.

Through the good offices of Prosper, we presented the Old Man with a package of tobacco and explained the purpose of our call. In reply John Mink said that he was old and his life was drawing to a close but that he had lived long and remembered much and would tell us what he could. He added that he was often lonely and would welcome our visits and said that it would make his heart glad to talk of these things. Even on brief acquaintance it was apparent that in Prosper Guibord, a man in his mid-sixties, of half French-American and half Indian descent, and equally fluent in English and Ojibwa, we had found an ideal interpreter. We arranged to hire Prosper, who had no other regular employment, and left

* The customary Ojibwa greeting, borrowed from the French, **bonjour.**

with plans made to meet at the Old Man's house early the next morning.

"I was born in the time of ripening strawberries when my people were camped near Rice Lake. My mother's mother helped at my birth and after I was cleaned up my father killed a deer for a feast. I remember being tied up on my cradleboard and watching the bright charms that hung from the hood. My mother put my umbilical cord in a little black bag and hung it from the hood. There were strings of colored beads and muskellunge vertebrae hanging there too.

"I remember the taste of my mother's milk. It tasted rich and good like bear fat and I remember crying for the breast. When I was able to eat wild rice and venison and blueberries, I stopped nursing. Later when my parents saw that I was healthy and living good my father gave a feast for my godparents. My mother's father, a speaker of the tribe, gave me the name **Shoniagizik** ('Sky Luminary').

"When I got off the cradleboard, I got my first moccasins and they had holes cut in the soles to help me walk. I was small and frisky and everyone liked me and laughed at me. My first toys were a little toboggan and a little bow and arrow. I killed squirrels and chipmunks with it and once I killed a partridge that was drumming. The arrow hit him right under the wing and he went straight up in the air and came down with his wings fluttering. My parents gave a big feast when I killed the partridge and the men told about their fasting and their dreams so that I would become strong and a good hunter. There was a big feast too when I killed my first deer with a musket. In those days there was lots of game and I remember the great flocks of passenger pigeons so thick they darkened the sky.

"I fasted all the time when I was young. In the early morning I would paint my face with charcoal and go off into the woods without eating. The spirits came to me in my dreams as I fasted and gave me the power to kill game and to cure people. They taught me songs and how to suck the disease from sick people and make medicines."

Thus began our colloquy and an almost daily association that lasted throughout the summer and early fall. We quickly

became adjusted to Prosper's part in our conversations, even to the point of becoming forgetful of the fact that he was a necessary medium of communication between us. Prosper's habitual deference to the Old Man, his own keen interest in following the trend of the discussion, and his tact and natural reticence combined to serve him well in the rather anonymous role of interpreter.

By design we had suggested that the Old Man begin by telling us his autobiography. Few devices are better calculated either to put an informant at his ease or to uncover leads that might be followed in subsequent sessions. Moreover, the telling of one's life story is akin to what the psychologist calls a projective test, and through it insights can be gained into both the personality of the man and the nature of his culture.

After a break for lunch the Old Man continued his story in the afternoon with an account of his marriages:

"The government used to make payments to us up at La Pointe. That's where I met my first wife. We saw each other and wanted to lie together. We just went to live with her folks for awhile and later we made our own wigwam. We were happy together, but she died in childbirth after we had been married five years. I mourned for her and when I ate I put food into a dish for her and I got clothes and other things for her and kept them tied up in a bundle.

"After a year I took the bundle and dish to her folks. They had a feast and gave the bundle of clothes to the guests. Then everyone helped wash and dress me. They combed my hair too and painted my face red and blue. My wife's folks wanted to get another girl for me. She was my wife's cousin, but I didn't want her and refused. When I was young all the women liked me because I worked hard and was a good hunter, but I loved my first wife most and even now I feel sad when I think about her.

"I was single two years before I married again, and it was then that I began to listen to the old men and learn from them. She was from the whooping crane totem and had been married before and had two girls and a boy. We lived together about ten years and had four children, but they all died when they were infants. Then I was single two years before I was mar-

ried again. She was married before too and began courting me even before my wife died. We had two children, a boy and a girl, but they died when they were very young. We lived together for a long time, more than thirty years, and then I was single for three years before I was married again. My last wife's name was 'Little Girl', and she belonged to the whooping crane totem too. We lived together for ten years and then she died. That was ten years ago.

"That's all the wives I have under the ground," the Old Man said. "They are all buried down there by the river. That's why I don't want to leave this place." Then he lay back on his bed and closed his eyes.

Like many another of his advanced age, the Old Man's memory had a vagrant quality. Incidents of his middle and later years were blurred in outline and events were telescoped so that it was often difficult to disentangle their chronology. One was never sure, for example, which wife was number three and which number four. But he had an almost startling ability to recall happenings of his youth. Narratives of hunting expeditions and various incidents of his early life were described in vivid evocative detail. One had the impression that he was recounting reminiscences that had been cast repeatedly into consciousness during his lonely hours and worked upon his memory as the sea works on a piece of driftwood. He had, moreover, a seemingly endless repertoire of tales, and an encyclopedic knowledge of intricate ceremonial and other lore that, unanchored to time, could be summoned at will from this vast sea of a memory.

In the days that followed we came also to appreciate other facets of his intellect, which in its vigor seemed incongruously housed in his old body. He was quick to grasp the point of any question. He had, in fact, answers for which we had no questions, and his own observations of Ojibwa customs revealed a subtle analytical habit of thought that made them as precise as those of any anthropologist.

One day shortly after our first meeting we discovered that Prosper had arrived at the cabin well before us and that he had deloused the Old Man and his bedding, washed and changed his clothes, and attended to his bath. To all of these

ministrations, John Mink had yielded without protest, but having suffered himself to be bathed, changed and deloused and made thereby presentable to a wider public, he insisted that we take his picture. He rummaged through the large trunk that served him as both chest and closet and, decked out in all the regalia that could be mustered, posed happily for us outside his door. Such is vanity.

In a small and simply organized society such as that of the Ojibwa, there are few offices that correspond to the professions of large and complex civilized societies. Among these are the roles of the shaman or medicine-man and the religious leader, both of which the Old Man occupied, and which in Ojibwa society as in many other groups provided the only socially sanctioned outlets for one of intellectual bent.

As the days passed and the Old Man's trust in us grew, his early reluctance to talk about religion, medicines and other esoteric subjects diminished so that by summer's end our conversations ranged quite freely across the whole of Ojibwa culture. Nevertheless, when discussing these touchy matters, he was sometimes uneasy lest he be accused of perfidy; nor did he fail to offer tobacco to the supernaturals before broaching sacred themes.

John Mink was a master of most of the healing arts. He was physician, obstetrician, pharmacologist, psychiatrist, homeopath, bonesetter and blood-letter all in one. He had amputated gangrenous fingers and had tried his hand at other minor surgery. The treatment the Old Man used varied according to the nature and source of the illness which in the more difficult cases he determined with the aid of his spirit helpers. There were many, both pagan and Christian, who sought his services for which he received modest payment in the form of gifts of food, clothing, money or tobacco.

His knowledge of blood-letting and authority to practice it had come through a dream in which a giant horse-fly and mosquito had appeared to him. These benevolent insect powers had taught him how the veins coursed through the body, where they should be tapped for various ailments, and the techniques to use. Before treating a patient he would seek their guidance in both the diagnosis and cure of the complaint.

He treated either by cupping or by opening a vein by tapping it with a sharp instrument. In the former method he used a hollow cow horn which was applied to the punctured skin and the blood induced to flow by sucking through a small aperture at the tip of the horn. Others, he said, bled a patient by pricking the skin with the sharp-toothed jaw of a garfish.

As an adjunct to other treatment and to ward off further misfortune, the Old Man often recommended that the patient erect an "offering tree" in propitiation of the supernaturals. For this a straight tree ten or more feet in height was felled. Then, stripped of its lower branches but with the topmost boughs left intact, the tree was erected in front of the patient's house and clothes hung from the tuft of branches.

The Old Man had wide knowledge of an extensive native pharmacopoeia. He had medicines to cure gonorrhea, to stanch bleeding, to reduce a fever and to ease colic. Diuretics, physics, poultices and tonics were in his repertoire, and he had prescriptions to stop menstruation or to start it and to induce the flow of milk in a new mother. His favorite medicine was one that he had learned from his paternal grandfather and was used to bring on labor. The expectant mother drank the potion from a birchbark vessel on the inside of which the image of a snake was etched with the head at the place on the rim from which the woman drank. As the liquid was drained, the figure of the snake was revealed and the child thereby frightened from its mother's womb.

Although much of his pharmaceutical knowledge had been taught him by older relatives, John Mink had paid substantial fees to other native doctors for many of his medicines and he had learned others as a part of his instruction in the Medicine Lodge Society.

Some of his medicines were compounded of numerous plants and other ingredients, animal, vegetable and mineral, including such substances as pulverized beaver testicles, cloves, bear fat, moss from a turtle's back and Epsom salts. Other recipes called for rare or exotic plants which were traded from tribe to tribe and hand to hand from places as distant as South Dakota and Canada.

Bundles of dried medicinal plants were stored in the rafters

of the Old Man's house and he kept others preserved in cans and jars. Outside his door he cultivated a garden of the more common medicinal herbs. Scarcely a tree or plant grew for which the Old Man did not know a variety of medicinal uses and in instructing me in their identification, I was carefully admonished to place an offering of tobacco beside the tree or bush or in the root-hole of the plant where, he said, a blind toad always crouched.

He prescribed sweat baths in the pungent steam of resinous evergreens as a remedy for such ailments as rheumatism and bronchial infections. Sweat-lodges were built for the purpose and steam made by throwing a brew of evergreens and other medicinal substances over hot rocks. Steam baths, he said, were also taken in a kind of purification ritual by persons who had handled a corpse and by hunters to rid themselves of telltale body odors. The Old Man recalled one occasion when he made a sweat lodge for a hunting party of ten men. They had been having poor luck, but the day after taking a bath each killed a deer and one man shot a bear.

One morning on arriving at the cabin we found the Old Man missing and discovered him in the woods nearby steaming his rheumatic legs under a blanket which he had thrown over a small structure of boughs. He explained that he had been troubled by his legs ever since he had years ago accidentally stepped over a discarded menstrual napkin. A woman's menstrual blood was regarded as a highly dangerous substance. It sickened or killed the tiny spirits that dwelt in one's limbs, he said, and cited instances where inadvertent contact with it had led to paralysis or other crippling affliction. Women are careless these days, John Mink said, and young girls are no longer taught the proper menstrual taboos. He told how his first wife used to eat out of her own special dishes when she was menstruating and wouldn't let him come near her, and how when it was over she would walk up to him and kiss him.

By far the most dramatic and powerful therapy practiced by the old man was that performed in a shamanistic seance during which he magically sucked the disease substance out of a patient. He had rarely performed such cures in recent

years, but he assured us that he was quite willing to have us witness a demonstration of his art. Prosper, who had not been feeling well of late, avowed that he had been wanting the Old Man to treat him and, his reluctance to ask for this favor dispelled by the Old Man's willingness to undertake a cure, happily volunteered to be his patient. We agreed to act as Prosper's sponsors by providing the necessary payment for the Old Man's services and arrangements were made to hold the curing ceremony on the following evening.

We gathered at the Old Man's cabin shortly after dusk. Besides the principals and us as observers, the company included a drummer, Andrew Q., Mary Marten and the latter's daughter, Alice W., and granddaughter, a child of ten. After we had all assembled the windows were covered to exclude both prying eyes and the last light of day. Andrew, acting as the Old Man's assistant, tightly closed the door after he had made a brief tour of the premises to see that there were no dogs about whose barking would frighten away the spirit helpers. We spectators sat in a semi-circle around the supine form of Prosper, our faces illumined by the uncertain yellow light of a guttering candle. The Old Man, his figure grotesquely silhouetted, stood opposite us. Prosper lay motionless before him on a blanket, eyes closed and arms extended at his sides. His gifts to the Old Man, a pair of tennis shoes and a package of tobacco, were displayed for all to see. Two finger-length tubes made from the polished leg bones of a deer were put in a shallow pie tin filled with salt water, placed on the floor at Prosper's side and covered with a red bandana.

The scene thus set, the Old Man began the ceremony with a recitation of his fasting experience. He told how in a dream on the fifth night of his fast he was led to a conjuror's hut by a flock of wild geese. Inside the swaying hut, which he entered through a hole at the top, were a spike-buck and six spirits. Later, her approach heralded by the sound of singing and laughter, these six were joined by a beautiful lady in a long dress whose home is behind the sun. These were the ones, he said, who taught him how to cure people and told him the songs to sing in summoning their help.

His recitation finished, he took up his rattle (a quart oil can

filled with buckshot), and accompanied by Andrew on the tambourine drum, began to sing. After singing a cycle of songs to call his spirit helpers, the Old Man dropped to his knees at Prosper's side and shook the rattle over him and also around his own body. Then, as the drumming continued, he put one of the bone tubes into his mouth and, after a brief pause, swallowed it, shuddering and jerking his body as the spirits entered it. Still kneeling, the Old Man regurgitated the tube and, bending close, sucked through it several times in the region of Prosper's lower abdomen. After each sucking he blew through the tube into the pan of salt water. Finally, obviously winded by his exertions, he spat out the tube. The drumming abruptly stopped and Andrew helped the Old Man to his feet.

The Old Man sang another song after a brief interlude and began a second series of suckings. This time he succeeded in extracting a small piece of whitish substance which was passed around in the pie tin for inspection before Andrew disposed of it. The Old Man said that he had gotten out only a part of the disease, but added that he believed he could get the rest of it the following evening when he would use a stronger spirit.

Prosper, his face flushed, arose somewhat giddily from the floor and made a ribald quip. The hushed, intense atmosphere was immediately dissipated, a lamp was lit and a bantering conversation began. Old Mary Marten, a giantess among women and to whom John Mink stood in a joking relationship, invited the Old Man to go for a walk in the woods. With eleborate thanks for the compliment, he declined, saying that he had never known a mole successfully to have sexual intercourse with a mountain. In this light mood the women then served a meal of wild rice and sweet buns which they had brought with them. The food eaten, the Old Man sang four more songs, whooping after each, which he said he did to frighten away the disease. The evening's ceremonies thus concluded, we disbanded at midnight.

We reassembled the following evening at the same hour and with some modifications the ceremony of the previous night was repeated. Prosper, averring that he had slept well

for the first night in ages, resumed his position on the floor, this time stripped to the waist. His gifts to he Old Man were a pair of gloves and two packages of tobacco.

For the evening's second course of treatments, the Old Man asked Alice to put the tube in his mouth and gave Mary the rattle to shake. He did this, he said, because two female spirits were helping him tonight. After sucking a couple of times he asked Andrew to get a larger bone which was secreted under the bed. He swallowed the tube, alarming us all by momentarily gagging on it, then regurgitated it and sucked again near Prosper's navel. On the first attempt he sucked out several pieces of the same white stuff and announced that he had now gotten it all.

The Old Man said that Prosper had been sorcerized by a woman, immediately identified by Prosper as a former mistress with whom he had lived at Chief Lake for two years and subsequently deserted. Prosper said that he could feel the bone go right through him and that he could also feel the place in his right abdomen from which the disease had been removed. He thanked the Old Man for saving his life, adding that he was sure the disease would shortly have killed him, for the woman had never forgiven him.

For John Mink the line between the natural and the supernatural was thinly drawn. His world was filled with an infinite array of spirits and forces that could influence the affairs of men. Nor was man conceived as a creature apart from the rest of nature. For the Ojibwa, as for many hunting peoples, animals and men are akin and the differences between them lay chiefly in outward form. Animals are motivated as men are motivated, live in societies as men live, act as men act and their fates are intertwined. Thus, the Old Man told how when a bear was killed its four paws and head were placed in position on a rush mat and a feast given. The head was decorated with ribbons, beadwork or baby's clothes and food and tobacco placed nearby; and speeches were made to the bear's spirit so that it would return to the village of bears and persuade other bears to allow themselves to be killed.

The Old Man believed in charms and portents, in sorcery and transformations, and in the power for both good and evil

of those who had fasted and dreamed. There were those, he said (and he was one of them), who could make the skins of loons come alive and cry out in order to foretell the future. He told how Old Man Skunk, now long dead, used a downy woodpecker skin that would move its head and make a tapping sound, and how for evil ends he would use the skin of an owl. And John Mink had often seen the "shaking" conjurors perform, but although he possessed the power and knew how to construct the conjuror's hut, he had never practiced the art out of fear of its possible bad consequences.

The Old Man claimed that he had never used his power for evil purposes, but there were many on the reservation who swore that they had been sorcerized by him and laid all their misfortunes at his door. Few doubted his powers and most were prepared to lend some degree of credence to the rumors that circulated about him. Even his staunchest friends, Prosper among them, regarded him with a kind of wary ambivalence compounded of both fear and deep respect. In passing it may be noted that the primitive intellectual's special knowledge, like that of his spiritual brother in Western society, is often suspect.

The second office held by John Mink was that of a ceremonial leader in both the Medicine Lodge Society or **midewewin** and in the Drum Dance a quasi-social society centering about a number of highly decorated sacred drums. Although ultimately derived from the Dakota Sioux, the Drum Dance was introduced to the Reservation by a band of Minnesota Ojibwa in the 1870's. John Mink was present on this historic occasion and in the capacity of "runner" participated in the first ceremony held at Court Oreilles. He supplied a full account of the Drum Dance, its membership, observances and history, including that of an heretical episode when one Steve Grover erected a cross on the dancing grounds and, wearing a vest on the back of which a red cross was embroidered, gave speeches that strongly smacked of Catholic doctrine.

As the foremost priest in the Medicine Lodge Society, the principal ceremonial complex of the Wisconsin Ojibwa, the Old Man had in his custody a birchbark scroll some six feet long on which pictographs and other mnemonic devices were

engraved in four panels. Each panel represented the ceremony and related lore to be learned by candidates for the four degrees in the Mide Society, which in the order taken are symbolized by ornamented pouches made from the skins of the otter, raven, fox and bear or animals of related species. Every spring and fall week-long ceremonies are held at the mide grounds, culminating in a colorful and elaborate two-day public ceremony in the Medicine Lodge itself, a long, open structure made of arched poles and decorated with cedar and pine boughs.

That autumn the ceremonies were held in early October and the Old Man took his usual active part in them. Each morning we drove him to the ceremonial grounds where his days were given to the instruction and catechization of the six initiates. His evenings and a few afternoons were spent in consultation and celebration with other priests and elder members of the society in one or another of the wigwams temporarily erected on the grounds.

One of these councils to which we were admitted was held in Whiskey John Moustache's wigwam. Here we joined John Mink, three other priests, their "runners" and two of the candidates for degrees. The latters' initiation gifts, consisting of several galvanized tin pails and a dozen blankets each, were in two piles beside which drums were placed. A number of medicine pouches hung from the wigwam frame. After presents of tobacco and food were passed out, the Old Man gave a speech asking the spirits to take pity on those present. As he spoke the others shouted, "Ho! ho!", in approbation. Then he took up his big rattle and sang, accompanied by the other three priests who shook smaller rattles and Whiskey John who beat a water drum. A brief consultation was then held to decide who should be invited to a later gathering and the "runners" were dispatched with invitation-sticks made of ornamented porcupine quills that had been dyed red. These were collected at the door as each of the twelve newly invited guests entered. Another meal, consisting of baked beans, bologna, raisin pie, cake and doughnuts, was laid and after it was eaten John Mink arose and gave a lengthy speech admonishing those present to follow the old

ways. We were then asked to leave and the entrance to the wigwam was closed. Long into the night the sounds of speech-making, singing and drumming could be heard issuing from this and other wigwams where the celebrants were gathered.

Preparations finally completed and the Medicine Lodge freshly repaired and decorated, the public ceremonies began on the morning of the seventh day. The American flag was raised. A black mongrel dog was taken off into the woods by one of the runners, killed and its body dragged into the Lodge. The initiates and Society members, dressed in their brightest clothes and carrying their medicine pouches in one hand and buckets of food in the other, lined up at the north entrance. After an opening song, they began to file clockwise slowly around the Lodge. Thus commenced the long and elaborate ceremony. Among its features were the magical "shooting" of the participants with **migis,** the variously colored cowrie shells contained in the pouches, and the ceremonial eating of the dog which, cleaned and singed, had been boiled in an iron camp kettle. It required a strong stomach to taste of the coarse meat, permeated as it was by the smell of burnt hair. Dog was eaten, we were told, so that the human beings who ate it would become as faithful to the supernaturals as a dog is to its master.

The ceremony lasted until sundown of the second day and the Old Man was the last to leave the Lodge. As we drove him home, he complained in a strangely querulous voice that it had gone off too slowly and that too many unnecessary things had been done. He said that he was very tired and didn't think he would last out the winter—and he told Prosper to see that he was buried with his medicine pouch and beadwork bandelier.

As shaman and ceremonial leader, John Mink's services were in demand at every crisis in the life cycle from birth to death, and many were the petitioners who came to his door. He had ushered many children into the world, and had named and been godfather to scores more. One of his boasts was that he had been godfather to child, parent, and grandparent in a single family. He had taken part in numerous mourning feasts

and he had been summoned many times by a runner bearing a gift of tobacco to officiate at a funeral.

Others came to him as a kind of confessor or to ask his advice on matters both trivial and momentous. Once when we were engrossed in a discussion of some moot point of custom, we were interrupted by a man who brought the paws and meat of a bear he had just killed. Not knowing the proper ceremony, nor yet willing to risk its omission, he came to ask the Old Man to smoke a pipe with him and to say a few words in celebration of the occasion.

As he was wont to do when queried about a particular observance, the Old Man recounted a personal experience by way of illustration, punctuating his account with brief asides when he touched upon points where custom varied. Thus he described his role on the occasion of the recent death of Mrs. P.:

On his arrival in mid-afternoon at the house of the deceased, the Old Man spoke a few words of condolence to the bereaved. Then he was handed a pipe and after he had taken a few puffs he sang a song, accompanying himself on a tambourine drum. Since the deceased had not requested a particular person to wash and dress her, the Old Man appointed a woman to take charge of these preparations. The men retired while the corpse was washed, dressed in her best clothes, and a blue circle painted on each check. Mrs. P.'s body was then placed on a rude catafalque of planks, covered with a sheet and her medicine pouch placed on her chest.

After the body was laid out, the Old Man began to sing, but he was interrupted by a group of Holy Rollers from the Whitefish settlement who asked permission to sing a few hymns and said they would stay only a short while. However, they stayed on and began to preach about being saved. The Old Man explained that the Holy Rollers were outsiders, but added that Mrs. P.'s husband and three of her daughters were Catholics, although one daughter by a prior marriage was also a pagan.

After the Holy Rollers finally left, the Old Man resumed his singing and preaching. Meanwhile the women bustled around preparing the food that people had brought to the

wake. Before the feast was begun the Old Man presented a bowl of food to the corpse, telling her to eat so that she would be strong for the long journey to the village of the dead. Then he gave the bowl of food to one of the women to eat. The Old Man added that it made him mad because he always had to make this speech and no one else would learn it or had gumption enough to get up and speak.

On the second day the body was placed in a ready made coffin that was supplied by the government. The coffin was carried out of the house through a window, placed in a hearse by the pallbearers, and then taken to the cemetery at Cable for burial. The Old Man explained that a corpse was always removed through a window, or in former days carried out through the back of the wigwam, lest another soon be stricken and die.

After the coffin was lowered into the grave, the Old Man spoke to the corpse about the journey she would take to the land of the dead. He admonished her not to look back, but to go right on and to be careful to leave offerings of tobacco and to obey the injunctions of the spirits she would meet along the way. He told her that on the fourth day she would come to a river spanned by what appeared to be a log, but which in reality was a huge snake. Similarly, what appeared to be a clump of red willows growing alongside the river would actually be a wigwam. The bridge, he told her, is guarded by two gaunt dogs and attended by two old women in whose custody the journey would be completed. After the Old Man finished his oration, the grave was filled and a wood marker on which the symbol of the deceased totem was painted upside down was placed at the west end.

The Old Man strongly disapproved of the changes, such as the practice of holding wakes, tossing a handful of earth on the coffin, or burial in distant places, that had been introduced in the mortuary customs. In the old days, John Mink said, the dead were buried close by in graves lined with birch-bark and food was regularly placed at the entrance of the grave-houses erected over them. No longer, he said, are poles put up in front of the graves from which passers-by might take the gifts of clothing and necklaces hung there and wear them

in honor of the deceased. Nowadays, he said, the dead are neglected and disowned.

The Old Man often expressed a strong craving for the native Ojibwa foods and after a long denial would eat ravenously of such delicacies as fresh-killed venison, bear fat or wild rice. Although frequently in precarious supply, there was variety in the native larder and John Mink described the seasonal round of the food quest with obvious relish. He told in full detail how wild rice, the staple food, was harvested, winnowed and threshed, how in early spring the hard maples were tapped, the sap boiled down and cakes of maple sugar made in birchbark or clam shell molds, and how blueberries were gathered, dried and stored in bark containers.

Hunting and fishing were year-round activities of the men and although deer, bear and muskellunge were prime objects of the chase, lesser game was also prized. Porcupine, rabbit, partridge, and smoked black suckers were counted by the Old Man as especially valued foods.

He described how in early April when the black suckers were caught by hand or in a variety of simple traps. Gutted and their heads and tails cut off, they were smoked and stored in bales and the Old Man recalled roasting them in hot coals and eating them as a kind of snack when he was a boy. And he told how the men would joke and the women giggle as they sat on logs alongside a weir and caught the suckers as they swam up onto a rack of poles.

Ice-fishing in the winter, however, was a solitary pursuit. A hole would be cut in the ice over a bar in five to ten feet of water, the Old Man said, and a blanket draped over the fisherman's head and shoulders and tightly secured so that no light would be let in. A weighted decoy in the form of a frog or minnow was bobbed from a short handle and a spear with tines of native copper held ready. When a fish approached the fisherman let the spear slide slowly down into the water until it was about a foot away and then the fish was deftly jabbed. The fish quickly froze solid, the Old Man said, and he would carry them home like a bundle of firewood.

For the hunting peoples of the northern latitudes starvation is a lurking threat that rides the winter blizzards and the bit-

ing cold. Stories of cannibalism were related by the Ojibwas and half-believed, for here was a theme, like those of classic drama, fascinating in its horrible possibility.

Thus John Mink told many tales about the **windigo,** legendary cannibalistic monster that stalked the woods in the lean winter months, in whom these fears were joined and given mythological expression: "One winter morning the people noticed that the kettle hanging over the fire began to swing back and forth, and they were scared because they knew a **windigo** was coming. Everyone trembled with fear and no one was brave or strong enough to challenge the **windigo.** Finally they sent for a wise old woman who lived with her little granddaughter at the edge of the village, but the old woman said she was powerless to do anything. The little girl asked what was the matter and they told her that they were all going to die.

"Then the little girl asked for two sticks of peeled sumac as long as her arms and took them off home with her while all the others huddled together in one place. That night it turned so bitter cold that the people's bones came near to cracking open. Early next morning the little girl told her grandmother to melt a kettle of tallow over the fire. Meanwhile it turned colder and colder and then the people looked and there was a **windigo** as tall as a white pine tree coming over the hill. Trees cracked open and the river froze solid when he passed by.

"The little girl went out to meet him with a sumac stick held in each hand. Her two dogs ran on ahead and quickly killed the **windigo's** dog, but he kept coming closer. The little girl got bigger and bigger as he approached until when they met she was as big as the **windigo** himself. She knocked him down with one sumac stick and crushed his skull in with the other—they had both turned into copper. After the girl killed the **windigo,** she gulped down the hot tallow and then got smaller and smaller until she was herself again. The people rushed over to the dead **windigo** and began to chop him up. He was made of ice, but in the center was the body of a man with his skull crushed in. The people were all very happy and gave the little girl everything she wanted."

That summer we listened to the Old Man tell many tales, including myths of **Wenabojo,** the mischievous and comic culture hero, who the Ojibwa affectionately called, "nephew". One long tale of **Wenabojo,** two days in the telling, embodied the Noah-like Ojibwa story of flood and re-creation of the earth wherein after loon, otter and beaver had failed, muskrat succeeded in diving to the bottom of the deep and all enveloping sea and coming up with a pawful of mud from which **Wenabojo,** with the help of all the animals and birds, refashioned the earth. The tale was told with a true story-teller's art that not even translation or our meager knowledge of the language could mask. The Old Man gave all the characters their separate voices, enlivened the tale with interjections, songs, and animal cries, and punctuated it with pauses and dramatic gestures.

Although too young to be himself a participant, the Old Man related many stories, too, of the war between the Ojibwa and the Woodland Dakota Sioux. As a boy he had been present at the "Chief Dances" that were held at both the departure and return of a war party. At these dances he had seen impaled on sticks the bloody trophy heads of the Sioux that had been slain, and he had listened to the returned warriors who, their faces still painted and wearing only a breechclout and an eagle feather in their hair, described their exploits to the last grisly detail.

By mid-autumn we had spent many days and hours with the Old Man and had covered virtually every aspect of Ojibwa life. The intricacies of kinship and social organization, prime anthropological topics received particular attention. Using sticks for males and stones for females, we made diagrams in the sand to represent the relationships between various kin. The Old Man supplied the appropriate kinship terms and described the behavior that customarily obtained between persons in specific relationships. In an account spiced with numerous anecdotes, he described the horseplay and broad joking that went on between brothers- and sisters-in-law, and the warm relationships that held between grandparent and grandchild, and between a man and his sister's son. He listed the various **dodems,** the loosely organized patrilines

to which the Ojibwa owed allegiance—catfish, wolf, lynx, bear, marten, deer, eagle, sturgeon, bullhead, whooping crane, loon, and the one to which John Mink belonged, **nibanabe,** a creature half human, half fish. If a person's totem or totem animal were insulted, the Old Man said, he would give a feast to which the offender and his totem-mates would be invited and good-naturedly forced to drink huge quantities of whiskey and gorge themselves with food.

He described the old Ojibwa arts and crafts which only a few still practiced, explaining how a birchbark canoe was constructed, how a bow was made and how the arrows were shaped, pointed and fletched, how glue was made from the swim-bladder of a sturgeon, and how a lacrosse club was fashioned. He described, too, the bitterly contested day-long lacrosse games that used to be played and on which huge amounts of various personal effects were bet.

The Old Man was familiar as well with the handicrafts that were the women's special province. He told how deer hides were fleshed, soaked in a solution of dried deer brains, then stretched, scraped again, and after they were dried and white as snow, formed into a closed cylinder and smoked over a smudge pot. He described how the women made rush mats, how they would weave into beautiful colored patterns dyed porcupine quills that had been flattened by pulling them through their clenched teeth, and how they would bite designs into small squares of birchbark.

"That's how things used to be," John Mink said. "The women were proud in the old days. They looked good in their braids and long dresses and they worked hard. Now they are lazy and dress in rags. There was always food in my wigwam then and I had many things. Now I live alone in a cold and empty house. The men no longer believe in anything. It is as though they were lost at a fork in the road and don't know which way to take. There is no one left here to take my place."

I last saw John Mink when we stopped by his cabin on the grey November morning we left the Reservation. He greeted us with the shout, little ponderous jig and flourish of his stick that had become a joke between us. A pot of cold rice on which he had breakfasted stood on the stove. We sat with

him to smoke a pipeful of tobacco and talked for a while in the pidgin of Ojibwa, English and exaggerated pantomime that we had jointly contrived. But even had Prosper been with us, there would have been no words with which to say "good bye". When we got up to go the Old Man came outside with us and watched as we walked down the path, his stick raised high in a gesture of farewell. Then as we faded from his dim sight, he turned and slowly went back into his house.

SURFACE INDICATIONS OF A POSSIBLE EARLY ARCHAIC CAMP-SITE IN WISCONSIN

Robert Nero

The occupation of eastern North America in very early times by hunting and gathering peoples is no longer seriously questioned and the number of reports of early-man sites in this area has rapidly increased in recent years. Archeologists have divided these remote times into two main horizons or large cultural complexes. The very early fluted-point people have been termed **Paleo-Indian.** Cultural remains of pre-pottery hunters and gatherers following the Paleo-Indians have been grouped under the term **Archaic.**

This paper presents evidence for a possible Early Archiac camp-site in Wisconsin and is based on a collection of artifacts, including several ground-edge lanceolate points and numerous gravers, obtained from the surface of a site about 12 miles southeast of Madison. The usefulness of surface material has recently been emphasized by the reports of Paleo-Indian sites in Pennsylvania and Vermont (Witthoft, 1952; Ritchie, 1953). These were based entirely on artifacts picked up from the surface, in the first case over a period of many years by amateur collectors who fortunately kept their collections segregated by sites. The total assemblage of material from the present site apparently represents a conglomeration of several cultures, but some predominant groups may be separated on a typological basis. This has been done for the lanceolate points and gravers, and the major emphasis of the paper is placed upon them.

The site lies on the farm of Mr. Alfred H. Havey and is therefore termed the "Havey Site" (Known as Da 13). This is evidently the site described by McLachlan (1925:204) as the "Outlet Village Site." I wish to acknowledge the kind cooperation of Mr. and Mrs. Havey in permitting us to tramp up and down their fields between 1949 and 1955. Thanks are due Richard A. Hunt who first showed me the site and who donated several scrapers and projectile points which he and his brother Robert Hunt collected from this site in 1949. I wish to also thank Archie Mossman, Dr. Dean Amadon, Dr. Keith Hamilton, Warren L. Wittry and my wife Ruth, all of whom accompanied me at various times to the site to collect material. Professor David A. Baerreis and especially Warren L. Wittry deserve thanks for constant encouragement and helpful criticism.

Location and Description of Site

The Havey farm is situated on a low, nearly north-south ridge about ⅛ mile from the eastern shore of Lake Kegonsa and less than one-half mile south of the Yahara outlet in Dane County (SW ¼ of SE ¼, Sec. 20, T6N, R11E). The river flows east out of the lake ¼ mile and then suddenly swings south ¼ mile, coming to within 100 yards of the nearest cultivated land before swinging east again. The ridge ends abruptly about ⅛ mile north of the farmhouse, but slopes more gently to the east; on the northeast end pastured land runs right down to the edge of the river. Except for this point, the ridge and lower fields are separated from the river to the north and east by about ¼ mile of sedge and cattail marsh. The ridge is continuous to the south and joins other higher ridges.

The area of the site is limited in our knowledge to the fields which were in open cultivation during the years we collected there. (The crops have been corn and tobacco, alternated with alfalfa.) This area included altogether about 17 acres, north, east and south of the house, but the majority of the artifacts were picked up within about 6 acres. Two additional acres directly north of the house (on top of the ridge) were in alfalfa at the times I visited the site. According to Mr. Havey, signs of occupation are especially numerous

in this area. Once, after a close cutting, I was able to find several artifacts here and much material was collected on the lower eastern slope of this section of the ridge.

Several artifacts collected by John B. Deming from the Stondahl farm, as the Havey Site was known in the 1920's, are on deposit in the Wisconsin State Historical Museum. This material was examined and was found to resemble in part the artifacts we collected, but since many of the artifacts collected by Deming were not clearly documented none of this material was used. Presumably the site was well-known to collectors for many years and probably considerable material has been removed by them. Since "pure" collectors are known to be pretty particular, choice points were possibly taken in place of broken points, scrapers, etc. Nevertheless, the size of the sample which we obtained should represent to a fair degree the cultural complexes of the site. A list of the specimens found by us is presented in table 1. All of the artifacts have been deposited in the archeological collections of the Wisconsin State Historical Museum.

Material

Projectile Points

A total of 78 projectile points were found of which 54 are considered to be non-lanceolate. Ten of these 54 were broken and could not be further classified. Twenty-one points were considered to be lanceolate in shape, and 3 other points were placed in the fluted-point category. For measurements of projectile points see table 2.

Group A. Side-notched (19—total number in the group; subgroup totals in parenthesis below).

A1. Large, heavy points with wide, square to u-shaped notches. Base as wide as sides, sides parallel above notches. (4). One of these has been reworked to form a "bunt" or blunted point (see Fig. 1, a. stippled area indicates a patina. Note that patina has been removed in some places by reworking). The other 3 have been reworked to a scraper-like edge. Grinding on the basal edge prominent on 2. Heavy flaking but well-made.

A2. Smaller blades, side notches less prominent and often very close to base. Sides parallel or gently sloping toward

Fig. 1

point. (7). (Fig. 1, b). Slight grinding of basal edge on 1. Very carefully made with shallow flaking.

A3. Base wider than sides. Sides converge from notches straight to point. Notching shallow and close to base, or nearly absent but base slightly extended. (3). (Fig. 1, c). Very well made. These resemble the **Madison Side Notched** type described by Baerreis (1953:154).

A4. Base much wider than sides and extended backwards forming distinct ears or lobes. Base deeply concave. Broad flaking on blade. (5). (Fig. 1, d).

Group B. Corner-notched (12).

B1. Narrow corner notching, sides parallel or gently sloping to point. Shoulders broad. Base ½ width of body to nearly equal width. (6). (Fig. 1, e). One with deeply concave base, one with convex base (slightly ground), others

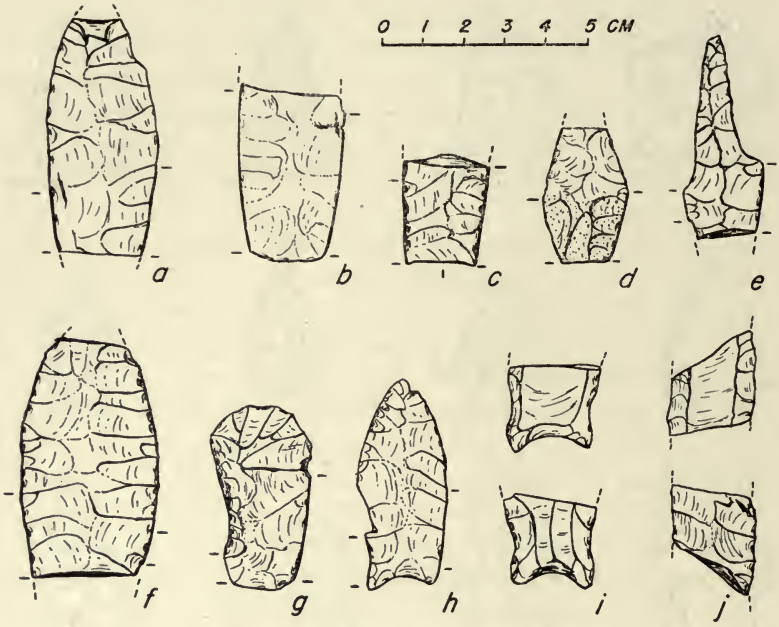

Fig. 2

straight. One has steeply beveled sides, 2 have "rotary" blades. Fair to good flaking, some rather crude.

B2. As above, but shoulders narrow. Sides converge abruptly to point. Barbed. Short points with notched base. (3). (Fig. 1, f). Barb truncated on 1; serrated edge present on 1; carefully made. These appear very similar to the points Brown (1921a) termed "angular barbed."

B3. Broad corner notching extended anteriorly leaving shoulder with posterior edge nearly parallel to base. (3) (Fig. 1, g). Straight, convex, and concave base. Base and notches ground on 2. More crudely made than B2, less retouching, large flakes shape whole piece.

Group C. Stemmed (10).

C1. Generally more crude than any of above. Notching, in effect, extended posteriorly with bottom of base just slightly wider than stem. Shoulders tend to be rounded. (3). (Fig. 1, h). Rather crude with few flakes to shape blade.

C2. Stem extended with sides of stem parallel and nearly

as wide as body. Base convex. (1). (Fig. 1, i). Crude flaking.

C3. Stem contracting, with convex base. Shoulder rounded (4) or concave posteriorly (2). (6). (Fig. 1, j). Crude flaking, but some fine retouching. These resemble points termed by Baerreis (1953:155) **Waubesa Contracting Stem.**

Group D. Elongated triangular (1).

A large, thick point with rotary blade. (Fig. 1, k). Carefully fashioned with large flaking.

Group E. Convex base (2).

See Fig. 1, l. Same as above in workmanship.

Group F. Folsom-like points (3).

Fluted or Folsom outline. One is a complete point which, although not fluted, is clearly of this general type (Fig. 2, h). It is relatively thin (maximum thickness—5mm.) and well made, with a slight amount of grinding on the sides near the base. It is 52 mm. long and 22 mm. wide. The two breaks in the edge are "plow-marks." A basal portion of another point is crudely fluted on one side and is also Folsom-like in outline (Fig. 2, i). The third piece is a fragment from the middle of a point which is fluted on one side Fig. 2, j).

Group G. Ground-edge lanceolate points (21).

Twenty-one points of this kind, all incomplete, were found. Fourteen of these are basal ends, the other 7 lack both base and point. In 4 pieces the sides diverge outwards from the base and then converge more abruptly to the point (See Fig. 2, a, f). The widest section of the blade is closer to the point than to the base. Nearly all af the basal portions have outward diverging sides but one narrow point seems to have had nearly parallel sides. The bases of the points vary from straight (6) to slightly convex (2) and concave (1).

Ground edges on the sides of the base are apparent on all 21 point fragments (Fig. 2, a to g). (Note that the grinding may extend to the widest part of the blade. The functional cutting edge, insofar as a piercing function operates, is that part of the edge of the blade anterior to the widest portion; grinding posterior to this position does

not therefore impede this function.) In 5 of the fragments the bottom edge of the base is also ground (2 straight, 1 slightly convex, 2 convex) (See Fig. 2, c). Grinding of the faces of the basal area is apparent on 2 which have slightly convex bases (Fig. 2, b). Because of the fragmentary condition of these points no measurements were tabulated, but a few measurements are presented here. The basal widths varied from 13 mm. to 36 mm. (the one point with a concave base). Three of the most complete pieces including Fig. 2, a and f) had maximum thicknesses of 6, 7, and 7 mm.; their maximum widths being 28, 29, and 33 mm. Two other large fragments represent a somewhat different shape. One which is 9 mm. thick and 35 mm. wide is estimated to have been about 160 mm. long. Complete specimens of this kind, found in the Madison area, often have a very long basal section with a quite narrow base and are usually termed "knives." A good example is illustrated by Brown (1921b) (Plate 1, second from left).
Three blades have been reworked to form drills (Fig. 2, d, e). Stippling on Fig. 2, d, indicates the area of a thin patina. Note that the patina has been removed where the point was reworked. Two blades have been reworked to form end-scrapers and 1 has had a concave scraping edge prepared on one side (Fig. 2, g). One small fragment of a ground-edge point has had a graver fashioned from it. Nearly all of the points show a skillful flaking technique with removal of wide, shallow flakes from the edge out to the middle of the blade (Fig. 2, a, b, c, f). One "drill" Fig. 4, h) exhibits a similar flaking and may belong to this group. The cross-sections of these points tend to be lenticular or double-convex, though some of them are quite thin. Of the 21 points, 6 are made of quartzite (Fig. 2, c, e, f); the others are made of various kinds of chert. (None of the 54 non-lanceolate points and only 55 artifacts out of the total 800 are made of quartzite.)

An additional very large, knife-like quartzite tool has a wide, convex base which has been heavily ground on the basal edge only. Minute scratches indicate that the grinding was done at right angles to the blade surface. More

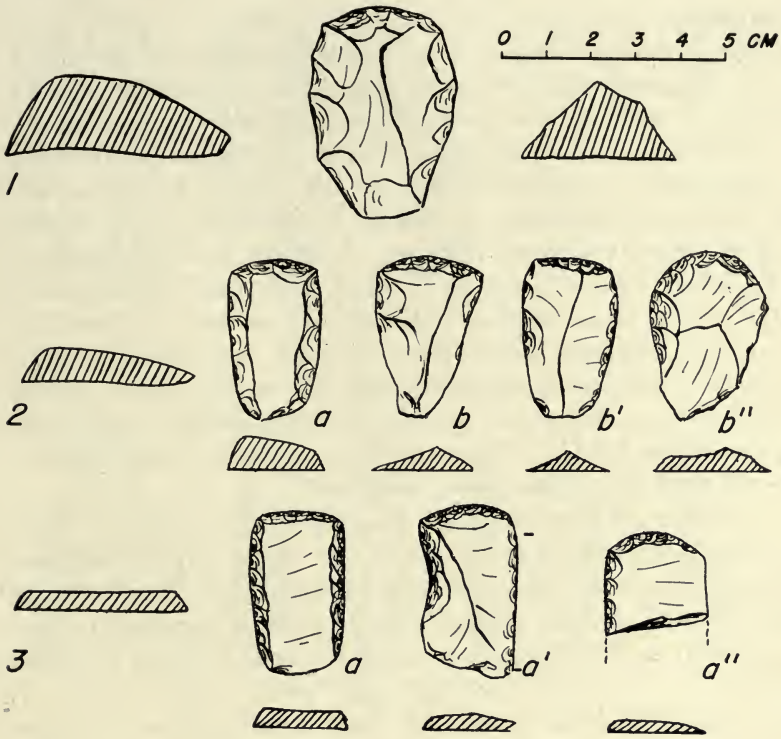

Fig. 3

commonly longitudinal grinding was observed on the above points. However, on the basis of workmanship this artifact is believed to belong to this group. It is 95 mm. long and 50 mm. wide.

Undeterminable Point or Blade fragments

Eighty-two fragments of wide blades or knives or points were found which were not determinable. This includes 44 tips. Based on the lenticular cross-section and kind of flaking I would guess that at least 14 out of the 82 represent the lanceolate type, but none of these fragments show any grinding. Forty-three "blanks" or "rejects", worked fragments suggestive of crude or rejected points or other forms (other than scrapers), were also found.

Gravers

Gravers were found in considerable abundance at the Havey Site in comparison with other sites reporting these distinctive tools. In view of the general occurrence of gravers in early-man sites and the analysis provided by the large number which were found, a separate report on the gravers has been submitted for publication to **American Antiquity,** and only a brief summary is presented here. A graver is a chipped stone implement characterized by a small sharp point fashioned on the edge of a simple flake or flake tool (such as a scraper) by pressure chipping usually directed from the ventral surface. Gravers are thus characteristically flat on the lower surface and by this means can readily be distinguished from bifacially-chipped drills. The general supposition is that gravers were used for incising bone and shell.

A total of 83 gravers were found at the Havey Site. They were made of chert and quartzite (4). Sixty-one of them had points which averaged 2.4 mm. in length, but 3 had points which were 10 mm. long or longer. Most of the gravers consisted of simple flakes without any other chipping exhibited, except that which formed the point (Fig. 4, d). A few were multiple tools, i. e., had extra chipping along an edge, forming a scraper, in addition to the graver point (Fig. 4, c, g; note the graver point on the upper right corner of the large, double concave side-scraper in Fig. 4, b). Fourteen gravers had more than one point (Fig. 4, e, f). On some gravers the 2 points are so close it seems as though they must have been used together (Fig. 4, f).

Drills

Sixteen drills were found. Seven of these are fragments from the tip end, ranging from 17 to 34 mm. long. Another piece 26 mm. long lacks both point and base. Five others are basal portions, or are complete (2). Two of these drills were made from flat flakes, leaving a squarish base wider than the drill stem. Another has a carefully chipped base which resembles these. One drill has a carefully worked, t-shaped base. Another carefully flaked drill-like implement has a very wide base and is shouldered (Fig. 4, h). This may have been reworked from a larger blade. As previously mentioned, three

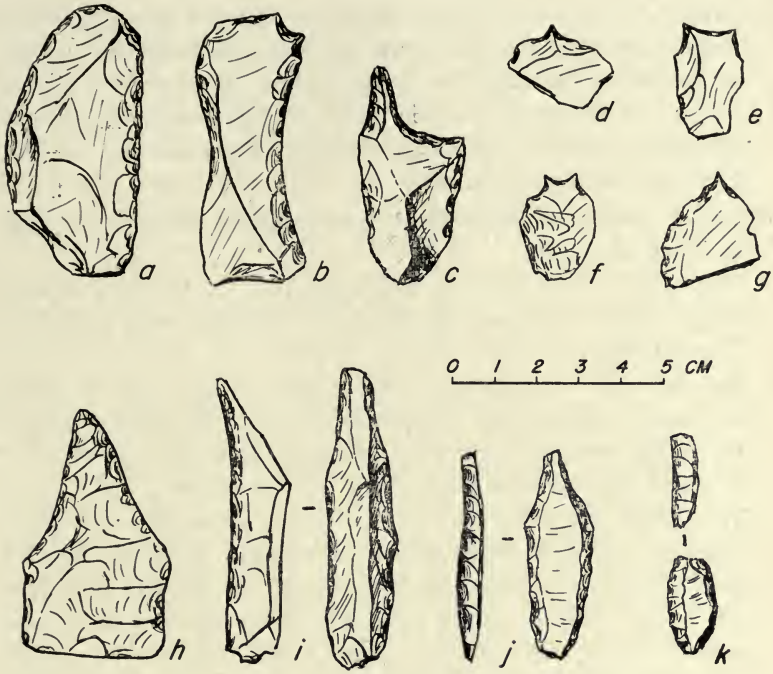

Fig. 4

additional drills have been reworked from ground-edge points (see Fig. 2, d, e).

End-scrapers

A total of 146 end-scrapers were found. For convenience of description these have been divided into 3 main groups largely on the basis of their longitudinal cross-section (see Fig. 3). Although some scrapers within main groups show a superficial resemblance, due to their outline, to scrapers within other groups, this means of classification worked well for separating most of the scrapers.

Group 1. Made from short thick flakes with a peaked top at the front end. (35).

Longitudinal cross-section shows decided slope from front to rear. Ridged tops also present in 17. Mostly ovoid in outline with small end at base. Generally they are the most crude of all the scrapers (see Fig. 3, 1). Cutting edge or

"bit" on front end. Nearly all have rounded bits, but 4 are rather straight. Eleven have definite trimming on one or both sides (resulting in a fairly straight edge). On 5 others basal end tapers to a crude point which was evidently deliberately shaped. Striking platform as basal end on 20. For measurements see table 3.

Group 2. Made from smaller, thinner flakes, but still thickest at front end. (58).

Slope from front to rear still apparent. Often lack dorsal ridge. Better workmanship and finer flaking than Group 1. Two kinds:

2a. Extensive trimming on both sides. Sides nearly parallel on some with narrow rectangular form. Bit rather straight on 9, but otherwise rounded. Dorsal ridge present on only 4. Striking platform evident on 9 at basal end. (26).

2b. Little trimming on sides. Wide, sometimes carefully worked bit, with sides often converging sharply towards base. Oval or fan-shaped (Fig. 3, 2b), or slightly trapezoidal (Fig. 3, 2b '). Based on flake with a narrow base, and sides only slightly retouched (Fig. 3, 2b ') or flake retouched to extend a circular bit (Fig. 3, 2b ' '). Dorsal ridge present on 13. Striking platform evident on 17 and at basal end. (32).

Group 3. Generally thin, flat, and of nearly equal thickness throughout (39).

No apparent slope from front to rear. Often wide rectangular or trapezoidal (sides converge toward base). Some show extensive trimming of edges: 9 on one side, 14—two sides, 2—**two sides and base.** A concave edge on one side with a straight edge on the opposite side occur on 5 (see Fig. 3, 2a '). In 3 of these the straight edge has been shaped by chipping; the other 2 have a retouched straight edge which has also been **ground** (Fig. 3, 2a'). One of each of these has the retouching on the ventral side of the flake. Several group 3 scrapers show little or no lateral trimming (Fig. 3, 2a ' '). More scrapers in group 3 have been found with the base broken off (17) than all the other kinds together. A dorsal ridge is present on 8. Striking platform evident on 9 at basal end.

Typical end-scraper bits have been shaped on the edge of each of 12 odd-shaped flakes which cannot easily be assigned to any of the above groups. Two other end-scrapers have each been fashioned from the base of a flaked point.

The lower face on all of the above scrapers varied from flat to slightly concave at the front end (often somewhat spoon-shaped). The presence of a striking platform an many has already been noted (55 in all); all at the basal ends of the scrapers. Only 2 scrapers had a bulb of percussion at the side (but bulb removed) (in group 2a). Thinning of the base with removal or near-removal of the striking platform occurred in 23 scrapers (8 in group 1, 7—2a, 6—2b, and 2—in group 3). In most of the scrapers all the chipping was limited to the upper surface of the flake. In 15, however, chipping occurred on the lower surface. These scrapers were in the following groups: gp. 1 (3—2 of the basal pointed ones, and 1 very crude piece); gp. 2a (2—wide flakes across the bottom as if to shape the piece); gp. 2b (6—3 with wide flakes across the bottom, etc.; 3 with edges trimmed); gp. 3 (4—3 with edges trimmed; 1 with whole surface worked). Eight scrapers of the whole lot are made of quartzite; the others are made of various kinds of chert.

Variations in angle of cutting edge

The anterior or main functional working edges of these end-scrapers vary in their angular cross-section from an angle of about 45 or 60 degrees up to 90 degrees and even to an obtuse angle. Scrapers with an edge which has an angle under 60 degrees are infrequent and their chisel-like appearance at first glance suggests a function as a chisel rather than as a scraping implement. Several points of evidence, however, suggest that these low angle scrapers represent the original or "brand-new" form, and that the scrapers with greater or obtuse-angled edge are ones which have been resharpened a number of times. Resharpening of the cutting edge appears to have been accomplished by retouching just enough to restore a continuous sharp edge. Retouched edges of nearly 90 degree angle show extensive "under-cutting" or horizontal fracturing of the flake channels. This faulty flaking is due to the steepness of the surface being worked and is a common phenomena.

In some scrapers a cutting edge is no longer apparent, but extensive under-cutting suggests that resharpening was attempted. A scraper of this sort would probably no longer have been functional and would have been discarded.

Ten scrapers which were selected from the above groups and arranged in a series which showed edges with an increasing angle also showed an increasing amount of undercutting. In addition, they were also increasingly foreshortened or blunted. In a few cases this trimming of the scraping edge and neglect of the sides resulted in a false spur or shoulder. In one scraper of this kind(retouching of the front edge was incomplete and a portion of the remaining orginal worn edge was evident. The appearance of a worn edge points to a need for resharpening of scrapers, at least if we suppose that they were used for a purpose requiring a sharp edge, such as scraping flesh from a pelt. In many of the scrapers the flakes along the front edge were less worn than those in other areas, showing evidence of reworking in the front area. Some scrapers, of course, have a working edge which is quite smooth and which appears to have been used for a long time in this condition. These were probably used for some other function than removal of flesh from fresh hides.

Side-scrapers

Large, trimmed-flake side-scrapers

Seventy large flake, or bifacially-trimmed flakes which may have been knives, were collected. This group includes 3 well worked blades, probably knives, which are wide and have a convex and straight base. These "scrapers" are all of variable form depending upon the inititial form of a large flake. Some are well worked but most of them show little shaping of the flake other than trimming along the edge.

Ear-shaped side-scrapers

Seven scrapers are made from long, thick flakes and resemble end-scrapers except that the major worked edge is on the sides. These range from 52 to 73 mm. long. They are thick and have roughly parallel sides or are somewhat ear-shaped (Fig. 4, a). Some of these may be deviant forms of end-scrapers fashioned for a double function. One of them is made of quartzite.

Narrow, double-edged side-scrapers

Seven artifacts from the site seem to be a specialized form of side-scraper. (See Fig. 4, i, j, k). Six of these are narrow, thick, and (in 3) ridged implements with steep flaking on two more or less parallel sides. The seventh is quite wide in comparison to these and has only a small amount of retouching on the edges. It is, however, ridged and pointed and seems to belong to this group. They are all flat on the lower surface and only one shows any flaking on this face. The smallest is 23 x 11 x 5 mm. (Fig. 4, k), the largest is 71 x 18 x 15 (Fig. 4, i). These bear a close resemblance to the "narrow bi-pointed bar, or ridged-back form" reported by Byers (1954:349).

Concave side-scrapers

Ten other large side-scrapers have a concave cutting edge prepared on one or two sides. One of this type also has a graver on one end (Fig. 4, b). Two of these scrapers are deeply concave and resemble the "spokeshaves" found at several sites.

Others

Sixty-seven other implements are crude, scraper-like forms, generally very large and heavy "choppers". Many of these have been made from immense flakes, with the edges trimmed by rough percussion-like flaking. Sixty-one fragments of scrapers of no recognizable form were also found. Some of these are very crude and generally small, but a few had well-worked edges.

"Turtle-back" or Circular Scrapers

Five scrapers are worked all the way around the flake and are more or less round. Three of these are thick and crude and range from 40 to 55 mm. in greatest diameter. Two others have diameters of 19 and 22 mm. and are thinner and better made.

Ground-edge Scrapers

One concave side-scraper is fashioned from the basal portion of a ground-edge lanceolate point (Fig. 2, g). Two end-scrapers which also have a concave scraping edge on one side further resemble the above side-scraper in that the opposite side on each scraper has been ground. A third end and side-scraper bears evident grinding on the base edge. Grinding on

one or two sides is also apparent on five other scrapers. The end-scrapers with ground edges are of the following groups: gp. 3—7, gp. 1—1. One end-scraper is made from the basal end of a very large ground-edge point and is heavily ground on both sides right out to the convex scraping edge. Another end-scraper is made from about an inch of the basal end of another ground-edge point. Ground-edge scrapers are rather uncommon and appear to belong to the ground-edge lanceolate point-graver complex. Further evidence supporting this contention is that two of the ground-edge scrapers and one graver are made of a distinctive kind of chert which is of rare occurence at the Havey Site. In a few of the above specimens fine grinding marks are apparent. These show that the direction of grinding was parallel to the edge. Most of the ground-edge points show a similar kind of grinding.

Retouched Flakes and Flake-knives

Included in this category are 116 small flake knives or very thin, side-scraper-like forms. Many of these are simple primary flakes which show a slight retouching along an edge as if in preparation for a cutting or scraping function. The shape of most of these is mainly dependent upon the shape of the original flake.

Hammerstones

Several round, smooth pebbles suitable for hammerstones were observed on the site but were not collected. Three bar-shaped, fine-grained, granitic stones with squarish to pentagonal cross-sections found at the Havey Site may possibly have been intentionally shaped. Each of these shows some fracturing on one end, suggesting use as a hammerstone. They range from 65 to 88 mm. long, and from 32 to 37 mm. wide.

Potsherd

A single small potsherd (20 x 20 mm.) was found. It is grit-tempered, cord-roughened, and thin (6 mm. thick).

Miscellaneous

A flat, oval pebble (37 x 27 mm.) which has a small hole (1.5 mm. wide) close to one end was found. The hole was drilled from both sides. Similar artifacts have been termed "pebble gorgets."

A piece of hematite 53 mm. long and 14 mm. wide was also found. This shows rubbing on 4 surfaces.

One iron concretion which was probably brought into the area by the occupants of the site seems worth mentioning. This seems to be a weathered crystalline form which resembles a large child's "jack." It has six rounded points and is 40 mm. long.

A small fragment of a kaolin trade pipe bowl was also found.

Discussion

The most interesting aspect of the Havey Site is the impressive number of gravers which were found. These may be considered as indicating that a major occupation of the site was by Paleo-Indian or Archaic cultures, since gravers have mainly been found in sites so designated. There are resemblances between artifacts from the Havey Site and Bull Brook, a Paleo-Indian site in Massachusetts (Byers, 1954) e. g., including gravers, end-scrapers with gravers, unique narrow 2-edged side-scrapers (Fig. 4, i, j, k), broad "ear form" side-scrapers (Fig. 4, a), and rubbed hematite. Most of the sites designated as Paleo-Indian, however, include a considerable number of fluted points, and it is this artifact which has more or less been diagnostic of the Paleo-Indian horizon. Only 3 points of the fluted type were found at the Havey Site. The two which were actually fluted had flutes on one side only. On the basis of these points we seem to be dealing with a later occupation.

Comparisons may be made with the Reagen Site in Vermont, which has been called a late Paleo-Indian site (Ritchie, 1953). The points from this site are unlike most of the other eastern fluted points and led Byers (1954) to omit them from his discussion of Eastern fluted point types. To some extent they resemble the lanceolate points from the Havey Site. Most of them had the side and basal edges rubbed smooth and only one-third of them were fluted. It should be pointed out that the Havey Site lanceolate points and gravers appear to be related: though each is rare in the area they are both relatively abundant at the site and one graver has been fashioned from the base of a lanceolate point. Further evidence supporting this contention also shows a relationship with certain scrapers.

Two ground-edge scrapers closely resemble a third which is made from the basal portion of a ground-edge lanceolate point. Two other ground-edge scrapers and a graver are made from a distinctive kind of chert which is rare at the site. Only 4 gravers were found at the Reagan site and each of these was combined with a "spokeshave" (i. e., a deeply concave side-scraper). A tool of this sort from the Havey Site is shown in Fig. 4, b. One double spokeshave was found at the Reagan Site—2 from the Havey Site (not illustrated) appear very similar. Many of the other scraper forms from both sites look very much alike, particularly the combination end and side-scrapers. Ritchie (1953:251) mentioned that in 3 out of 6 of this type a worn-edge extends along one side to near the base." It would be of interest to know whether these smoothed edges were actually "worn" as the result of use as Ritchie intimates or whether they were purposely ground as was the case with similar forms from the Havey Site. The unique soapstone pendants from the Reagen Site may possibly be represented at the present site by the "pebble gorget" which was found. A very similar perforated pebble was found at the Faulkner Site in Southern Illinois (MacNeish, 1948:239), a preceramic complex related to the Archaic assemblages of the eastern United States. This site also yielded several gravers and many side-notched points, though no lanceolate forms such as were found at the Havey Site.

At the Archaic Starved Rock Site in northern Illinois the lanceolate point with truncated base was considered the "most obvious diagnostic item of the non-pottery complex." (Mayer-Oakes, 1951:313). Starved Rock Archaic points (of the lanceolate shape) and those from the Havey Site are similar in general shape, in having sides which converge toward the base, and in having wide, shallow, and parallel flaking which extends to at least the middle of the blade (e. g., see Fig. 2, f). The lenticular cross-section is also common to points from both sides. The major difference between the points lies in the base, which is usually concave in the Illinois points, whereas only 1 from the Havey Site is of this shape. Both straight and slightly convex bases are represented, however, at Starved Rock. Rubbed hematite, side-notched bunts (Fig. 1, a), and

other side-notched points were also found in Starved Rock Archaic, but only 2 gravers were found. The scarcity of gravers at Starved Rock and the abundance at the Havey Site suggest a difference in culture or a difference in the use of the site. The former seems the easiest explanation.

Gravers and ground-edge lanceolate points have been previously reported for Wisconsin by Baerreis (1953) who considered such items found at the Airport Village Site to belong to an Early Archaic horizon. The material from the Havey Site shows resemblance to late Paleo-Indian and Early Archaic complexes and may represent a transitional culture. That is assuming that the lanceolate points, gravers, ground-edge scrapers, etc., from the Havey Site represent a single complex, evidence for which has already been submitted. Some of the non-lanceolate points may also belong to this group; several kinds of these have been found at Archaic sites. It is also probable that some of these points as well as other artifacts represent later occupations by people of different cultures. It is known, for example, that a Winnebago village was located in the vicinity of the Havey Site in the 1830's (McLachlan, 1925:204).

REFERENCES CITED

BAERREIS, D. A.
1953. The Airport Village Site, Dane County (Da2). **The Wisconsin Archeologist,** Vol. 34, No. 3, pp. 149-164. Milwaukee.

BROWN, C. E.
1921a. Angular Barbed Arrowpoints. **The Wisconsin Archeologist,** o. s., Vol. 20, No. 1, pp. 18-19. Milwaukee.
1921b. Chipped Flint and Quartzite Knives. **The Wisconsin Archeologist,** o. s., Vol. 20, No. 1, pp. 7-12. Milwaukee.

BYERS, D. S.
1954. Bull Brook—A Fluted Point Site in Ipswich, Massachusetts. **American Antiquity,** Vol. 19, No. 4, pp. 343-351. Salt Lake City.

McLACHLAN, W. G.
1925. The Lake Kegonsa Region. **The Wisconsin Archeologist,** n. s., Vol. 4, No. 4, pp. 181-206. Milwaukee.

MacNEISH, R. S.
1948. The Pre-Pottery Faulkner Site of Southern Illinois. **American Antiquity,** Vol. 13, No. 3, pp. 232-242. Menasha.

MAYER-OAKES, W. J.
1951. Starved Rock Archaic, a Pre-Pottery Horizon from Norern Illinois. **American Antiquity,** Vol. 16, No. 4, pp. 313-324. Salt Lake City.

RITCHIE, W. A.
1953. A Probable Paleo-Indian Site in Vermont. **American Antiquity**, Vol. 18, No. 3, pp. 249-258. Salt Lake City.

WITTHOFT, J.
1952. A Paleo-Indian Site in Eastern Pennsylvania: An Early Hunting Culture. **Proceedings of the American Philosophical Society**, Vol. 96, No. 4, pp.. 464-495. Philadelphia.

Table 1. List of Artifacts from the Havey Site

Projectile Points	78
Undeterminable Point fragments	82
"Blanks"	43
Gravers	83
Drills	16
End-scrapers	146
Side-scrapers and other scrapers	166
Underterminable scraper fragments	61
Miscellaneous (hammerstones, hematite, potsherd, etc.)	9
Total	800

Table 2. Measurements of Projectile Points, Groups A to E (mm.)

Group	Range in length	Range in width	Number
A 1	29 - 31	27 - 35	4
2	31 - 55 (?)	21 - 32	7
3	35(?) - 40	16 - 22	3
4	37 - 51	23 - 32	5
B 1	32 - 64	25 - 42	6
2	28 (?) - 32	21 - 27	3
3	30 - 37	20 - 30	3
C 1	34 - 45	21 - 33	3
2	(See Fig. 1, i)		1
3	47 - 56	24 - 32	6
D	(See Fig. 1, k)		1
E	51 - 65	25 - 30	2

(? Measurement based on estimate from slightly broken point.)

Table 3. End-Scraper Measurements (mm.)

	Length		Width		Thickness	
Group	Range	Average	Range	Average	Range	Average
1	26 - 63	45	21 - 43	30	10 - 25	14
2a	28 - 70	43	19 - 34	26	6 - 11	9
2b	20 - 49	34	19 - 40	26	5 - 12	8
3	24 - 46	36	15 - 40	27	3 - 11	7

INDIANS IN AN URBAN SITUATION

Robert Ritzenthaler and Mary Sellers

Throughout his early history the North American Indian has been a rural population. Unlike some of the Indians of Central and South America who built substantial cities such as Tenochtitlan and Cuzco, the Indians north of Mexico never developed beyond a band or village pattern. With the invasion of the white man and the subsequent installation of the reservation system in the nineteenth century, the Indian was either moved from, or concentrated in, his traditional locale, but in either case continued on as rural enclaves. Even today the majority of the Indians of the United States are classified as rural dwellers, although there has been an increase in the number of city settlers particularly in the last three decades. To emphasize the fact that this has not been a mass migration are the United States census figures for the year 1940 which lists 26,886 of the total 333,969 Indians as urban (i. e in cities or other incorporated places having 2,500 or more inhabitants), and 307,083 as rural dwellers. [1] Thus, only one Indian in twelve was a city dweller in 1940. It might be of interest to note the cities claiming large concentration of Indians. The following is a list of cities of 100,000 or more, with 200 or more Indians as taken from the 1940 Cenus:

New York	1,064
Los Angeles	862
Tulsa	623
Buffalo	487
Detroit	434
Oklahoma City	303
Chicago	274
Milwaukee	260
Syracuse	225
San Francisco	224
Seattle	222

As this list is limited to the larger cities, the distributional picture is not complete. Some of the smaller cities have important Indian contingents, for example, Spicer [2] reports an

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1 Sixteenth Census of the U. S., 1940, Vol. II, Characteristics of the Population. U. S. Govt. Printing Office, Washington, 1943.

2 Spicer, E. H. Pascua. U. of Chicago Press, 1940.

estimated 1200 Yaquis in 1940 living within the boundaries of Tucson, a city of 32,000. In some instances accurate figures are not available such as for Rapid City, South Dakota for which the Indian population has been reported to be somewhere between one and three thousand in 1951 (Lovrich, p. 29).

There is no doubt that more Indians are city dwellers today than in 1940. With the present Indian Bureau policy of subsidizing the Indian in terms of transportation to the city and during the initial period of contact with the city, a sharp rise in Indian migration to the city is to be expected.

Thus far there has been little done by the anthropologist on the problem of the adaption of the Indian to urban life, although such studies would be of interest and significance to both the theoretical and applied anthropologist. The importance and potentialities of this area of research, and the reason why anthropologists have tended to shy away from it have been very competently pointed out by Beals (1951), and will not be elaborated upon in this paper. What seems to be needed before reliable generalizations on urban processes can be made is a body of literature consisting of actual field studies, with an emphasis on the ethnographic approach, of people such as the American Indian who are involved in the process of changing from a rural to an urban manner of life. It was with this idea in mind that we began a study of the adjustments made among the some one thousand Indians living in the city of Milwaukee, Wisconsin in 1951.

This study was also the outgrowth of the realization that while considerable was known about the reservational Indian communities in Wisconsin, practically nothing was known about the Indians living right here in Milwaukee. We did know some individuals here, what tribes were represented, and that the census figures for 1940 listed 260 Indians living within the city limits. We were rather sure that there was a great amount of mobility both in job and residence among them, that they lived largely in rooming houses in poorer sections of town, and were on the lower end of the income scale. We strongly suspected that they were an encapsulated community with little interaction with the general community except what

was required by the practical necessities of living. We knew that there was about a half dozen taverns that were recognized as Indian "hangouts" where they assembled to dance, exchange news and gossip and in the process sometimes got drunk. We knew that they had one organization here called the Consolidated Tribes of North American Indians which claimed a fairly large membership, but actual meetings were held mostly in private homes and the monthly turnouts small. We suspected that the main attraction of the city was in terms of employment, and that the influx of Indians was greater in the winter when economic conditions grew more serious in their home communities. We knew, too, that while some came (often without any money) only to work for a few months during the winter, there was also a permanent contingent that considered Milwaukee their home.

So, to test these preliminary hunches and to explore other aspects of their urban adjustment, we drew up a five page questionnaire and began interviewing. The plan was to interview every Indian within the city limits over 21 years of age and with enough Indian blood to be so categorized by other Indians. The interview was to take place, if possible, in the home of the interviewee ,as part of the questionnaire involved an observational assessment by the interviewer as to class of neighborhood, type of furniture (linoleum vs. rugs on floor, etc.) and the existence of "luxury" communicational devices (telephone, radio, television sets).

After a number of test interviews, the questionnaire was revised to some extent. We next approached a class enrolled in a group study course in the school of Social Work at the University of Wisconsin Extension in Milwaukee. The project was "sold" to them as a class project and we thus obtained the assistance of eighteen students to help with the interviewing.

The class was given government post cards with names and addresses of Indians. Each was given seven cards grouped by neighborhoods with instructions to mail out these announcements of their arrival three days before the interview. Actual interviewing began around April 1, 1951 and continued for a month and a half. Early experiences were somewhat disap-

pointing in terms of the fact that many of the people either were not at home or refused to answer the door in spite of the fact that cards had been sent telling them the time of interview with the opportunity to change the time if not convenient. We decided that some just didn't bother to remain home, while the refusal of others to answer the door was their way of handling the situation. This by the way fits in with Hallowell's analysis of the Chippewa pattern of indirect aggression.[1] While no doors were slammed in interviewers' faces, they took the indirect way by not answering the door. The final coverage was much below what we had anticipated with interviews for 75 out of the 306 households obtained, a coverage of about 25 percent. The results, which follow, are presented under subject headings as covered by the questionnaire.

The Migration

The migration of the Indians to Milwaukee began during the 1920's. Of the 75 heads of households interviewed 17 moved in during this period, particularly during the years of 1922, 1923, and 1924. Of these 17 all were Oneidas except for one Stockbridge, and one Chippewa. Thus the Oneidas are not only the largest group in Milwaukee, but also the earliest group to settle there. They are also the only group to lay claim to having Milwaukee born adults. Three of the 75 household heads listed Milwaukee as their birthplace. The 1930's saw little movement of Indians to the city. A total of five came during 1930 and 1931, but during the next eight years only three moved in. These were depression years when jobs were few, and some of the families already established in the city were forced by economic circumstances to return to the reservation. With the boom of World War II during the 1940's there was a major influx of Indians to Milwaukee with readily available jobs in the defense plants. During this period twenty-eight of our interviewees arrived. Of these twelve were Oneida and nine were Chippewa. The movement to the city continued during the early 1950's with nine arriving in 1950 and four coming in during the first three months of 1951 at which time our survey ended.

1 Hallowell, A. Irving.

The correlation of economic conditions with the movement of Indians to and from the city, coupled with the statements of the Indians themselves, show that the essential reason for the urban migration is to obtain employment. Seventy-three percent of our interviewees stated that they had come to Milwaukee to find work. They had selected Milwaukee for such reasons as: they had heard that wages were higher there, that there was a wider opportunity for jobs, they had friends or relatives already living there. Other reasons given for coming to Milwaukee were: to go to school (3%), came for a visit and stayed (10%), parents moved here (5%) to live with relatives (5%), others (4%).

It is also apparent that while the majority of the Indian population in Milwaukee is a permanent one, or at least semi-permanent, there is always a small floating population. The floating population is made up of those who come to the city particularly in the winter when work is scare in the Reservation areas with no intention of remaining more than a few months. Frequently only the husband will come, get a job to tide the family over the winter, and return to the Reservation in the Spring. It is difficult getting data on this group, but the general pattern seems to be that they will move in with friends or relatives, find a job and work for two or three months, and then leave. The family, if small, might be sent for and an independent residence taken, but this is impossible if the family is large.

There is also some correlation between urbanization and acculturation in the Wisconsin scene. The Oneida and Stockbridge are by far the most acculturated tribes in Wisconsin and have provided the largest contribution relative to their size in the state. The other tribes are roughly similar to one another as to state of acculturation and are represented in Milwaukee in approximate proportion to their Reservational numbers. Thus the Chippewa who make up about one-half of the total Indian population in Wisconsin rate second to the Oneida in numbers in Milwaukee. The breakdown is as follows:

	On Reservations (Individuals)	In Milwaukee (Families)
Chippewa	6000	59
Menominee	3000	4
Oneida	1700	190
Winnebago	1500	14
Stockbridge	500	26
Potawatomi	220	13
		306

Our census for the Milwaukee Indian is at best approximate. The Oneidas had compiled a list of families with address and number of children, but for the others it was necessary to interview individuals as to friends and relatives of their own tribe now living in Milwaukee, and cross-checking the results. We feel that the 306 families is very close to the actual number, and by extension we arrive at our estimation of one thousand individuals for the total population. This figure is far above the United States Census Report for 1950 which lists only 381 Indians for Milwaukee as follows: 194 males, 187 females. This disparity between Census Reports and estimates by people in direct contact with the situation is noted for the St. Paul-Minneapolis area. The Census Report for 1950 lists 589 Indians for the twin cities, while Mrs. H. P. Mudgett, Assistant Professor of Intercultural Education of the University of Minnesota states "Whether the figure is close to 8500 (current opinion estimates) I do not know, but I have on my desk the membership roll of one small Indian organization representing 120 families—which rather settles the question of the Census Reports."

Part of the answer as to why the Census Reports do not record all Indians as Indians lies with the method of obtaining information on race. Race is regarded as a sensitive area of inquiry by the Census Bureau, and enumerators are instructed to fill in the racial identification on the basis of observation, with the direct question as to race used only when doubt exists. As the enumerators ordinarily have no training in determining race, there is considerable likelihood of Indians,

especially those of lighter skin, to be recorded as white.

Where They Live

The Indians of Milwaukee are concentrated in four communities: one on the lower East side, one on the near South side, one on the near North side, and one on the near West side. In all four cases these are the older, less desirable areas of the city and largely made up of rooming houses or furnished room dwellings. These perhaps should be considered areas of concentration rather than communities for the Indian population is so small and ununified as to leave the area uncolored and uninfluenced by their presence. One informant volunteered the observation that Indians do not group together because they particularly want to live together but that they select a place because of cheap rent. It is interesting to note that while roughly 90% of the Indians live in one of the four areas, only 50% of the mixed marriages live therein.

It was found that 88 per cent of the Indian households were renters with the remaining 12 per cent owners. The general Milwaukee population in 1950 consisted of 71 per cent renters and 29 per cent owners.

ECONOMIC LIFE

Type of Occupation

Fifty-eight percent of the employed males listed their occupation as skilled, 42% unskilled, 10% were unemployed, 22% were engaged in construction work (both skilled and unskilled), 35% engaged in factory work (both skilled and unskilled), 17% were laborers. Few have trades, none were in any kind of a business, and none in professions.

The length of service data revealed a high degree of job mobility. The fact that a good many came to the city to get a job for the winter and then return is indicated by the fact that 37% of male workers interviewed had held their present job less than six months. On the other hand, considerable steadiness of employment is indicated by the following figures:

Worked at present job from 1- 5 years:	29%
6-10 years	19%
11 or more years	16%

Four Indians had been with the same company for 20 years or more.

Income

Amount of income was an optional question, and about one-third of the interviewees did not answer it, and we feel we have no reliable data to offer. Of those who did check one of our income categories however, the category "$3000 or over" was the mode. It appeared that the more successful were less hesitant about revealing their income.

Savings

Thrift is a trait generally regarded as largely absent among the Wisconsin Indians. The urban Indians, however, seem far ahead of the rural in their ability to save money. In Milwaukee 29% of the Indians had a savings account in a bank. This figure is below the general average for Milwaukee, but far above that of the rural Indian. Sixty-seven percent carried life insurance. This was surprisingly high to us, and certainly far above the rural figure. Eighteen percent had government bonds. Twenty-seven percent had no savings of any kind.

The greater ability to save of the urban over the rural Indian population is undoubtedly due to the factor of greater income and steady income for the urban dwellers. The marginal existence of most of the rural population makes saving very difficult.

Type of Dwelling

The breakdown on type of dwelling was as follows:

Furnished rooms	29%
Unfurnished flat	29%
Unfurnished Apartment House	10%
Unfurnished Bungalow	9%
Furnished Bungalow	7%
Furnished Flat	5%
Unfurnished Rooming House	4%
Furnished Apartment	3%
Trailer	3%

In the two largest categories it is to be noted that the most permanent group, the Oneidas, are almost entirely absent from the furnished rooms, but make up nearly all of the unfurnished flat category.

Housing Mobility

It was our impression that there was a high degree of housing mobility among the Milwaukee Indians. The study showed that this was not so. Sixty-seven percent of our interviewees had lived at only one address since their arrival with the record being one family who had lived in the same place for 25 years. There were a few families which moved rather often: one moved 4 times in 2 years, and 3 families had moved 3 times in 2 years, but in general the Milwaukee Indian is a sedentary phenomenon.

SOCIAL LIFE

Joining Organizations

The Milwaukee Indians are not joiners. Exclusive of church organizations, it was found that 66% did not belong to any organization, 29% belonged to one organization, and 5% belonged to two organizations. If Louis Wirth's observation that the urban individual becomes effective only as he acts through organized groups, it would follow that the Milwaukee Indian is essentially an ineffective member of his community. The joiners belong to the local Indian organization known as the Consolidated Tribes of North American Indians. This organization has officers and regular monthly meetings held in the homes of the members, and a few social events each year. While the membership roll is fairly large, turnouts at the meetings are small. Lack of interest and a certain amount of factionalism prevent it from being a really effect and representative instrument of the Milwaukee Indians at the moment. The only other Indian organization in town is the Oneida Guild. The Oneida Guild is an organization of Indian women with elected officers which meets at All Saints Episcopal Church once a month. The women work on various projects from 10 o'clock until noon, have prayers and lunch, and a business meeting until 3 o'clock. In 1952 there were 15 active members, mostly Oneidas, but a few Stockbridge and Chippewa. All Indians are welcome regardless of religion, but most of them are Episcopalian. Most of the work is done for the church. They sponsor luncheons, make "safety-pin rugs", etc., and have one project for the Indians — namely raising

money for an old folks home to be erected at Oneida (They have $135 in the treasury for this purpose now). Part of the function of the organization is purely social—to help Indian women get acquainted. They have three square dances a year at the Guild Hall at All Saints.

Contact with Reservation

The question "how often do you go back to the Reservation for a visit" was asked to determine how much actual contact with the Reservational community was maintained. Thirty percent stated that they never visit the Reservation. Of the 70% who have not severed with the Reservation, the modal visit is once a year, with the next highest being once a month.

Indian-White Relationships

Most of the people stated that their friends consisted of both Indians and whites. In a few cases they said they had no white friends, and in a few cases (mostly among mixed marriages) it was stated that they had only white friends. There was some tendency to select Indian friends from their own tribe.

Tavern Visiting

On the question as to frequency of visits to taverns, 34% stated that they did not visit taverns at all, 20% said they visited them occasionally, 37% stated they visited a tavern at least once a week. The mode was once a week.

The most common reason given for visiting taverns was to meet their friends. This was the response given by nearly all the interviewees. Other responses were as follows: to drink and dance, cash pay checks, to shoot pool.

Most stated that they did not visit any special tavern, or if they did it was one in the neighborhood. However, there are six taverns in Milwaukee that are recognized as Indian hangouts. One is owned and operated by an Indian, the others by whites. All but one are located on the lower east side of town.

The chief social function of the tavern seems to be that of the old English Coffee House. The Indians go to visit their friends, meet new people, exchange news of their friends and relatives back on the Reservation. In the process they sometimes get drunk. One of the hangouts has dancing on weekends. While we never attended one of these, we heard

various reports to the effect that these were fairly raucus affairs with considerable drinking, and fights not uncommon.

Movies

The mode for movie going among Milwaukee Indians is once a week. The types of movies attended in order of preference are:

1. Western
2. About Indians
3. Detective
4. Love
5. Comedy

Of those selecting "Love" as their favored type of movie, all were women but one.

Discrimination

The attempt to arrive at the amount of discrimination encountered by Indians in Milwaukee was handled in the questionnaire by the direct question method. It was asked as follows: "Because you are an Indian have you ever had any trouble in Milwaukee in

A. Getting a job
B. Finding a place to live
C. In public places such as hotels and restaurants.
D. In joining an organization
E. With a policeman

A simple yes or no answer was expected for each part of the question, but if a yes answer was forthcoming, we asked for the details of the instance or instances. Ninety percent of the interviewees answered no to all five questions. Of the eight persons who said they had encountered discrimination three had experienced it in connection with getting a job; one in both job and finding a place to live, and in joining an organization, and in a public place (hotel); and one who stated that the owner of a house refused to sell it to him because he was an Indian. It is, of course, often difficult to determine whether or not a person has actually been discriminated against, or if other factors were in force. Our findings are thus not to be regarded as completely accurate, but we feel that the general picture is revealed. That discrimination is so rare as to be an unimportant problem to the

Indians of Milwaukee is apparent not only from the questionnaire, but from the fact that none of the Indians consulted regarded it as a problem in their adjustment to Milwaukee life. A common response was that while companies in their reservational communities refuse to hire Indians, they had encountered none of that in Milwaukee. What seems most significant is that the Indians themselves do not regard discrimination as a problem.

Mixed Marriages

Of the 75 households investigated sixteen were found to consist of mixed marriages. Eleven of these were marriages of Indian women to white men, and five were Indian men married to white women. Eight of the first group were women of the Oneida tribe, one was Potawatomi, and one was Chippewa. All non-Indian spouses were of European derivation (i. e. Caucasoid) except in the case of one woman who was married to a Mexican. In the case of Indian women married to white men the identification and interaction is with the whites, although in three of the thirteen cases there was also some interaction with the Indian community. Four of the five cases in which Indian men had married white women also identified themselves with the whites. There is no significant economic differences between the families of mixed marriage and those in which both spouses are Indian. Both are in the lower income brackets and live in the same type of below average neighborhood.

An interesting generalization that can be derived from this study is that an urban area offers a greater miscegenation potential to the Indian. Twenty-two percent of the marriages investigated turned out to be mixed marriages. This is in extreme contrast to the reservational communities where it is doubtful that more than one percent of mixed marriages can be found. Thirteen of the sixteen Indians met their white mate in Milwaukee. In intertribal marriages many of the members of different tribes met at Indian Schools.

Religion

We were interested in learning if the Indian changed his religion upon becoming an urbanite. As far as the traditional Indian religions are concerned there are no rites or meetings

held in the city. If the person is a peyote or Midewiwin member he will return to the reservational community to participate in in the ceremony. However, the number of these seems small. The Christians tend to carry on in the faith they had followed before coming to the city. The best control group are the Oneidas who are nearly 100% Episcopalian in their home community and were of that faith before coming to Wisconsin in 1822. Our figures show that the Oneidas carried on their religious beliefs in Milwaukee with 89% of those investigated being members of an Episcopalian church in the city.

MISCELLANEOUS

Educational Background

The background of the Milwaukee Indian adults is low. The amount of formal education seems to be somewhat greater for the Milwaukee Indians than for the rural, but somewhat less than for the general Milwaukee population. It is readily apparent that the women have had more schooling than the men. Of our interviewees, 11 did not finish grade school, 19 finished grade school but did not go to high school, 38 went to high school, but only 13 finished, and only one person went to college.

Communication

Of 55 households answering to the question as to their ownership of television sets, radios, and telephones it was found that 16 had television sets, 52 radios, and 28 telephones. Nine of the 16 television sets were in the homes of mixed marriages. It is interesting to note that only three families did not have a radio.

Reading Habits

Nearly everyone reads at least one newspaper. A small number read two or more newspapers.

While most of the Indians read the newspaper, few read books. The survey showed that 75% of those asked had not read a book during the last three months.

Voting

Nearly 50% of the Indians have never voted in Milwaukee. Of these a few have voted in their reservational com-

munities. Of the people who do vote in Milwaukee, one-third did not vote in the last election, but have voted within the last two years.

Dancing

Greatest preference is for modern (ballroom) dancing, with square dancing as second preference.

Music Preference

Greatest for popular music, with others in order of preference as follows: square dance, western, classical, and semi-classicial.

Conclusions

The shift from reservation life to Milwaukee life involved some important sociological changes for the people concerned. It was a step from a classless into a class society. It was a change from a situation in which a person knew and was usually related to every other person in the community to a situation in which few of his neighbors were kith and fewer kin. It was the change from the slow tempo of the rural life to the accelerated pace of urban life. It was the change from a situation offering limited choice to one offering considerable choice in terms of types of entertainment, employment, acquaintances, mates and housing. It was the change from a homogeneous to heterogeneous society. Some have made the change relatively easily, some reluctantly (there are those who state they would return to the reservation community tomorrow if a living could be made there), and some give up the attempt and return home. That urban life has caused changes in the individual is recognized by the urban dwellers themselves, who think of the newcomers as country cousins and claim to be able to distinguish them by their clothing and actions.

While changes in habits, manner of living, and values have taken place, it is not to be thought that the Indian is a radically different person as a result of his life in the city. The accomodations of the Indian to urban life has, perhaps, resulted in some modifications, but the basic personality pattern of the Indian seems to have survived in the urban environment.

BIBLIOGRAPHY

BEALS, RALPH L. Urbanism, Urbanization, and Acculturation. Amer. Anthrop. Vol. 53, No. 1, Jan.-Mar., 1951.

FRANTZ, CHARLES. Urban Residence and American Indian Acculturation. Unpublished paper on Rapid City.

LOVRICH, FRANK. The Assimilation of the Indian in Rapid City. Unpublished M. A. Thesis, Dept. of Sociology, U. of South Dakota, 1951.

MITCHELL, J. Reporter at Large. New Yorker Mag. Sept. 17, 1949.

SPICER, EDWARD. PASCUA, A. Yaqui Village in Arizona. U. of Chicago Press, 1940.

WIRTH, LOUIS. Urbanism as a Way of Life. Amer. Jr. of Sociology, Vol. 44, No. 1, July, 1938.

CHARLES E. BROWN CHAPTER REPORT

One of the major objectives in the formation of this local chapter in Madison was to provide meetings for the many interested persons in south-central Wisconsin who, because of the distance, could not attend all of the meetings of the Wisconsin Archeological Society in Milwaukee. That this objective has achieved a good measure of success is attested by a healthv increment in membership and well attended meetings. During its third year 48 persons paid the nominal $1.00 chapter dues. Meetings were held at the State Historical Society on the second Monday of each month, attendance ranging from 31 to 47 and averaging 35.

Mr. Frank A. Achen was president for the year, Mrs. Charles E. Brown, secretary, and Warren L. Wittry, treasurer. The following series of programs was arranged by the program committee, under the chairmanship of Dr. David A. Baerreis .

October: Warren L. Wittry, Wisconsin's 1954 Archeological Field Season."

November: Dr. David A. Baerreis, "Culture sequence in the Valley of Mexico: 4000 years of Mexican Archeology."

December: Dr. Milton Barnett, "The Venezuelan Andes: The Region, the People, and the Archeology."

January: Discussion of Birdstones and Boatstones. Movie, "Digging into History."

February: Discussion of Beads and Beadwork, and Bone Tubes. Movie, "Learning about the Past."

March: Dr. Kirk H. Stone, "Archeology from the Air."

April: Dr. Chandler W. Rowe, "The Effigy Mound Culture of Wisconsin."

May: Dr. James B. Griffin, "Southern Influences on Wisconsin's Prehistory."

—Warren L. Wittry

DOUBLE POT

Milwaukee Museum Collection

This is the only example of a double pot known for Wisconsin. A clay connection joins the top one-fourth of the vessels. Of Woodland culture it is 4½ inches in height, with each rim diameter about 3 inches. It is reddish buff in color, grit-tempered, with incised designs. Found in Sheboygan County by M. H. Thomson.

Interesting Wisconsin Specimens

RED OCHRE BLADES

Milwaukee Museum Collection

Primary chipped chert blades with secondary retouching and traces of red ochre. The three at the left were found in Milwaukee County. Culture unknown.

THE PORTAGE COUNTY HISTORICAL SOCIETY is interested in filling gaps in their Wisconsin Archeologist series. If you have back issues you wish to sell, especially in the Old Series, send a listing of the volume numbers to Mr. C. D. Swanson, 401 Green Bay Ave., Park Ridge, Stevens Point, Wis. The current rate for the Old Series is $1 per issue; New Series 50¢.

We are pleased to learn that the Portage County Historical Society has begun a county-wide survey project to inventory and map the prehistoric Indian remains in that county. This is important work and we wish the project every success.

ROBERT L. HALL, one of our members, has been appointed Director-Curator of the Lincoln-Tallman Museum at Janesville.

Member DAVID AMES of the University of Wisconsin anthropology department is spending the year with the Menominee Indians studying problems connected with the termination of U. S. Government supervision proposed for 1958.

Archeological work of this summer and fall included the STATE HISTORICAL MUSEUM'S excavation of rock shelters in Sauk County under the direction of WARREN WITTRY, and the excavation of a mound in the Prawatschke group, Dodge County, by the MILWAUKEE PUBLIC MUSEUM. Both were part of the coordinated program of THE WISCONSIN ARCHEOLOGICAL SURVEY, and reports of the results will appear in the Archeologist.

ABOUT OUR AUTHORS . . . ROBERT NERO is now on the staff of The Saskatchewan Museum of Natural History, Regina, Saskatchewan, Canada. JOSEPH B. CASAGRANDE (with whom we spent a wonderful summer among the Chippewa Indians) is with the Social Science Research Council, Washington, D. C. KERMIT FRECKMANN, member of our Society for 30 years and present President, did his usual pro-

fessional job of surveying and mapping the Joedicke bird mounds near West Bend. ROBERT RITZENTHALER is a full-blooded Cleveland Indian and a past President of the Sahara Desert Canoe Club.

HAROLD HEMPEL, Fall River, Wis. wants to purchase "The Antiquities of Wisconsin" by Lapham, and "Emblematic Mounds and Animal Effigies" by Peet.

Bob Ritzenthaler, Editor
Public Museum
Milwaukee, Wis.

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THE WISCONSIN ARCHEOLOGIST

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Milwaukee, Wisconsin
Incorporated, 1903

For the purpose of advancing the study and preservation of Wisconsin Indian Antiquities.

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A REPORT ON THE DIETZ SITE (Da 12), DANE COUNTY, WISCONSIN

Dietz, Baerreis, Nero, Cutler

Introduction

The land which has in the past been farmed by Mr. E. F. Dietz and now is being engulfed by the expanding City of Madison, has yielded abundant indications of prehistoric Indian occupation. Although we are not able to present a full account of the details of this prehistoric settlement, we are able to provide some information that will serve to partially identify the nature and time of this earlier occupation of the Madison area. Work at the site is continuing at the present time (during the summer of 1955) and has become even more pressing because of the subdivision of the farm into building lots under the name of Golf Green Subdivision. The report includes, first of all, a description of the area and the discovery of the storage pits by E. F. Dietz. This is followed by a description of the pits and their contents by Robert Nero and David A. Baerreis. We are indebted to Professor John C. Curtis of the University of Wisconsin's Department of Botany for the identification of the plant remains and to Mr. William P. McHugh for the preparation of the plate showing the shape of the pits which was drawn from the field sketches. The final section of the report consists of a description by Dr. Hugh C. Cutler of the Missouri Botanical Garden at St. Louis of some charred corn cobs found in one of the storage pits of the site. While the early Woodland Indians in Wisconsin had been thought to be agricultural, this is the first specific description of prehistoric corn from the state.

THE DIETZ SITE (Da 12) AND ITS STORAGE PITS

E. F. Dietz

The ancient Indian food storage pits described in this account are located in a sandy hill situated about 500 feet north of the northwest edge of the Hemmersley Marsh, which is 2½ miles directly west of Lake Wingra, one of the five major lakes in the Madison area. The specific location is the SW¼ of the SE¼ of Section 30, Township 7 North, Range 9 East.

This 80 acre marsh, so named after a family who early settled on its southern side, has been from ancient times an attractive site for Indian occupation. It is the receiving basin for the surface drainage from several square miles around it, and is in spring more of a shallow lake than a marsh. It has no outlet, consequently the waters contained here furnish ample feeding and breeding ground for all varieties of waterfowl and marsh birds.

In recent times it has been a favorite shooting place to obtain ducks and geese. In ancient times, it must have been a place of abundance of bird life for human consumption. The muskrat population, which is usually large, also furnished the Indians with easily obtained fur and food. Upland game must have used this place as a water hole in dry weather, as is attested by an ancient game trail leading to the deepest part of this basin.

To the north of the marsh are a number of Indian mounds. Most of these are now obliterated by plowing and house building. However, as a boy I used to occasionally observe these mounds. As I remember them, they had the shapes of birds and bears, with long single and crossed linear mounds interspersed. These ancient mounds are indicative of a rather large and more or less permanent Indian population within the environs of this marsh.

I happen to own the farm land adjacent to the marsh on the northwest side. For fifteen years I have plowed and planted this land, some of which I have cleared from the virgin forest. I have picked up many arrowheads, scrapers, reamers, and pieces of chert hoes used in gardening as well as a couple of stone axes. Chert chips litter the soil in immense numbers in-

dicating a long period of tool production on this ground.

The soil on this farm is in general a silty loam, and in the vicinity of the marsh is quite level. As a place to store food during the winter months, the lower ground near the marsh would not be very satisfactory since the sub-drainage would be poor. Pits dug near the marsh would fill with snow water over winter. However, the surface of a sandy ridge adjacent to the flat land offers a location that remains dry throughout the year.

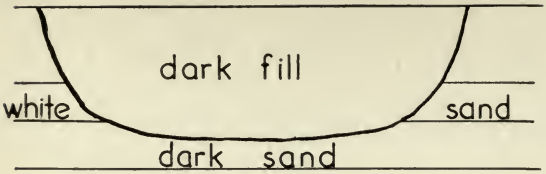
In choosing this spot for their storage pits the Indians showed good judgment. Their winter habitation area, however, was close to the marsh edge, where one can still find remains of their dwelling firepits, and where one now finds chert chips from artifact manufacture. No chips are found on the storage pit hill.

Finding of the Storage Pits

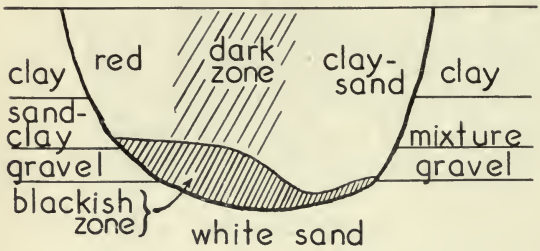
I have plowed the tillable land on my farm many times. In August 1953 I was plowing the sandy hill containing the storage pits. Robert Nero had been out to see me a short time previous and he had told me about some Indian graves he had been working on at the Reigh Site in Winnebago County. While plowing I noticed for the first time certain dark patches showing up in the light colored sandy soil. Right away I thought of graves. I called Bob out and he dug up one of the patches with a shovel. About all he found on the first dig was a depression containing mixed soil and charcoal. So it was evident that these dark patches did not represent graves.

Shortly thereafter, Professor David Baerreis came out to see me and the weather being ideal, the three of us put in considerable time excavating and exploring what are evidently the remains of food storage pits of the aboriginal inhabitants of this area. This fall, when I again plowed this storage pit hill, I was careful to observe the furrow bottoms as the plow crossed the hill. Although we had excavated in all 16 pits the previous year, I noticed that many more pits still remain to be explored.

The pits that are now observable are those which had burned after they were constructed and used. It is the charred remains of wood, nut shells, acorns, and perhaps corn, that



Feature 1



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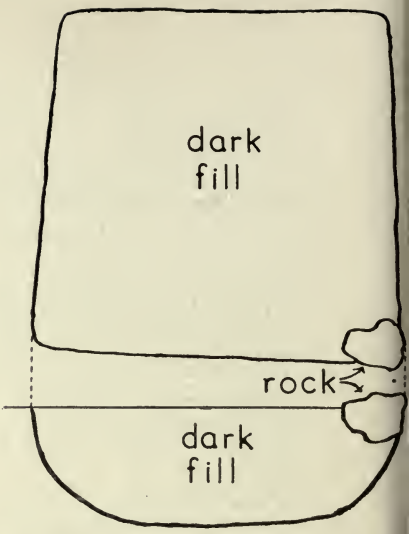
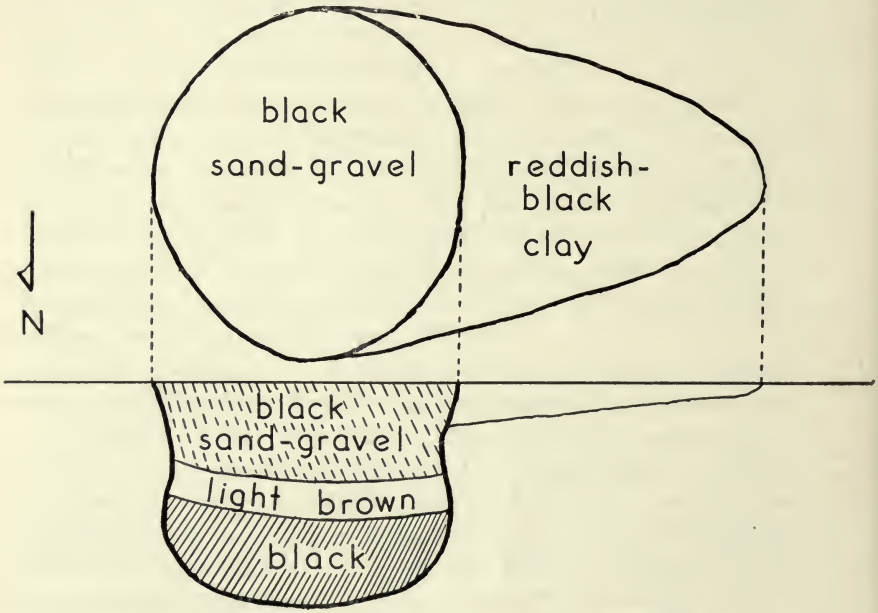
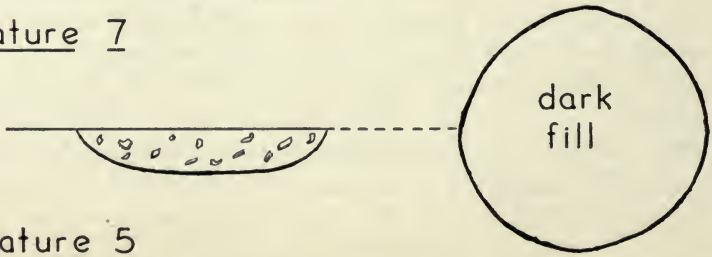


Feature 6



Feature 7



Feature 5

FIGURE 1. Diagrammatic representations of characteristic pits found at the Dietz Site.

blacken the earth and make these pits stand out as darkened spots in the lighter colored soil. In our excavations we sometimes found the outlines of two pits merged into one, indicating that an earlier pit had burned out, and a later pit had been dug cutting into the older pit, this later pit in turn having been burned out.

The archaelogical literature contains many accounts of graves and mounds and most people are familiar with these two aspects of Indian culture. However, heretofore little has been written concerning the storage of food for winter. Since these storage pits are difficult to find, it might be well for those persons interested in Indian archaeology to watch for signs of these pits. Since the pits are most likely to be found in a dry hill, it seems reasonable that evidence of additional storage pits will most likely be found in the soil of well drained hills that are close to known habitation sites.

THE STORAGE PITS OF THE DIETZ SITE (Da 12) AND THEIR CONTENTS

David A. Baerreis and Robert Nero

As Mr. Dietz has indicated in his report, the storage pits were discovered by the presence of darker soil zones which stood out clearly against the lighter color of the unmixed sand of the ridge. For reasons including economy of time, no attempt was made to strip the plowed zone from the surface of the ridge in any systematic fashion although this would doubtless have revealed many additional pits. The plowed zone was removed from those areas clearly showing the presence of pits and smoothed to show the outline of the upper portion of the pit. Each pit was then given a feature number and the contents carefully excavated. A sketch of the outline of the pit and the cross section of the pit was recorded and notes were taken of the nature of the fill. Artifacts and plant and animal material found in each pit were kept in separate containers, each labeled with the feature number. The horizontal location of the pits giving their relative distance from each other was mapped.

A brief, summary description is given of each of the features in the following section. The pits primarily contained charred

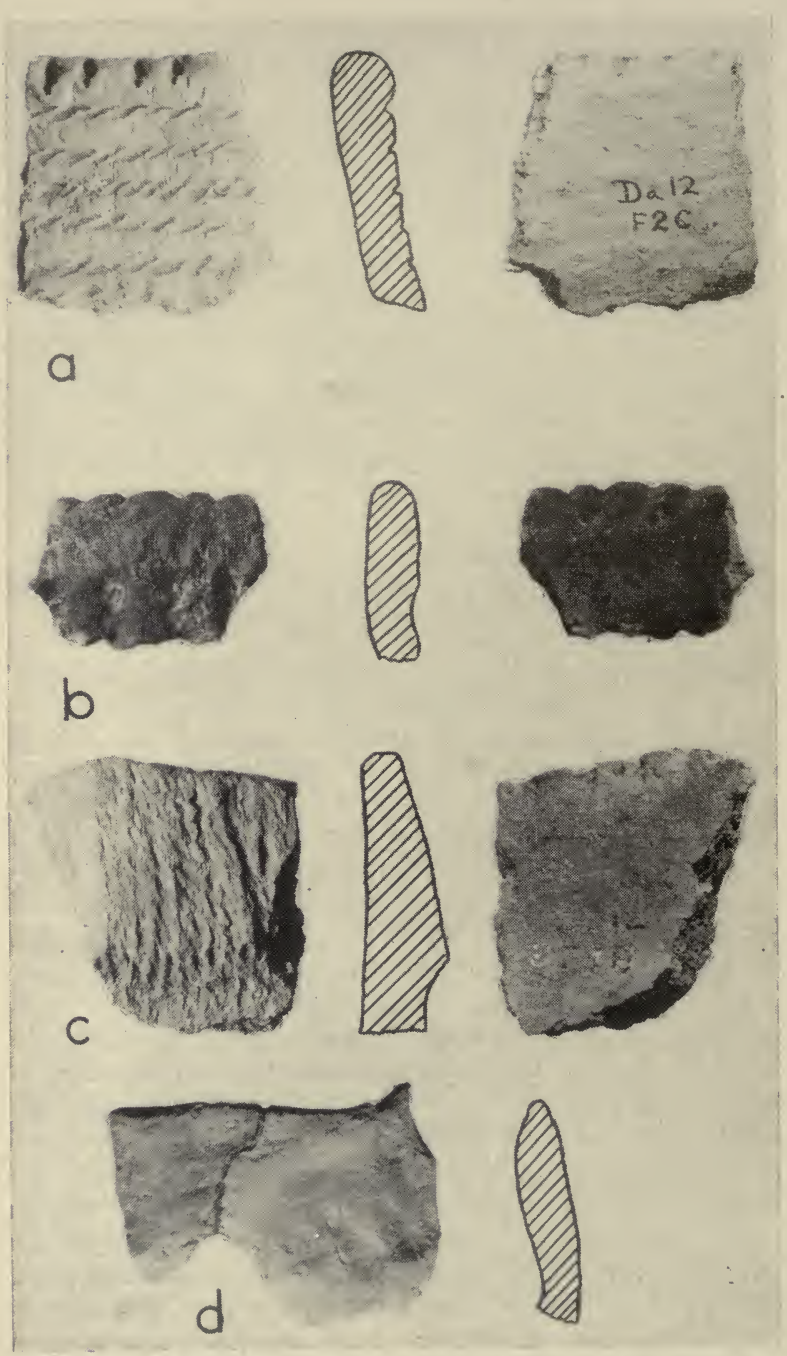


FIGURE 2. Distinctive rim sherds from the Dietz Site. Inner section of rim profile to left.

plant material, some animal bone fragments, flint chips and a series of potsherds generally of small size. The contents, in terms of the categories just listed, are described on subsequent pages rather than individually for each pit in order to conserve space. The appropriate tables provide the means by which those items associated in a single pit may be regrouped.

Description of the Storage Pits

Feature 1. Form: a shallow basin, circular in outline, with convex sides and base. Dimensions: diameter 48", maximum depth 16" below plow zone. The pit cuts through a sand and clay mixture to a layer of white sand at the level of the base of the pit. The shallow depth of this latter layer at this position in contrast to its deeper appearance elsewhere on the ridge may indicate that a substantial portion of the upper part of the pit has been removed by plowing and erosion. A diagrammatic section of the feature is shown on Figure 1.

Feature 2. Form: a shallow basin, circular in outline, with convex sides and base. Dimensions: diameter 45", maximum depth 36" below plow zone. The pit is slightly deeper and has a more convex base that Feature 1. The soil was darker toward the center of the pit which contained a concentration of charcoal and burned hickory nut fragments. A dark black zone was also noted at the base of the pit. See diagrammatic section on Figure 1.

Feature 4. Form: a shallow basin, oval in outline, with convex sides and a sligthly flattened base. Dimensions: diameter 35 by 24", maximum depth 5" below plow zone. The pit had been excavated in a reddish clay and contained small fragments of charcoal but no cultural material.

Feature 5. Form: extremely shallow, concave basin which is circular in outline. Dimensions: diameter 30", maximum depth below plow zone 5". Figure 1 shows a diagrammatic section of the feature.

Feature 6. Form: a shallow but roughly squared outline; cross-section is convex, the walls tapering to the deepest point in the center of the feature. Dimensions: side walls are respectively 40, 41, 45, and 43 inches in length; basin has a maximum depth of 14" below the plow zone. Small fragments of

burned bone were found throughout the entire fill. A large stone, approximately 8" in diameter, rested in one corner. A diagrammatic outline and section of the feature is shown on Figure 1.

Feature 7. Form: immediately below the plow zone the top of the pit is oval in outline with the sides contracting to a point of maximum constriction where the outline is circular. Below this point there is a slight expansion in diameter and the base is slightly convex. Dimensions: 72 by 42 inches immediately below plow zone; basal circular area has a diameter of 35"; pit has a maximum depth of 27" below the plow zone. The basal ten inches of the fill had a deep black color. Above this was a five inch zone of light brown soil while the area to the surface was a blackish, sandy gravel. The western margin of the top fill was slightly cut into by the fill of Feature 8 which should therefore be regarded as being later in time. A diagrammatic outline and section of the feature is shown on Figure 1.

Feature 8. Form: a roughly circular, shallow basin having an irregular convex cross section. Dimensions: 40" in maximum diameter although only the central 14" was a markedly darker color; dark zone had a maximum thickness of 6-8" below the plow zone.

Feature 9. Form: shallow basin with circular outline having convex sides and slightly convex base; sides expand slightly in diameter from top. Dimensions: maximum diameter 24"; maximum depth below plow zone 12".

Feature 10: Form: shallow basin with circular outline having convex sides and nearly flat base. Dimensions: 46" in maximum diameter immediately below plow zone; maximum depth below plow zone 17". Upper half of pit fill consisted of a dark soil while lower half was of a lighter, brown color.

Feature 11. Form: shallow basin with circular outline and convex sides and base. Dimensions: maximum diameter 20"; maximum depth below plow zone 6". Although soil was of a rich, black color, the only materials found were a single flint chip and one small fragment of burned bone.

Feature 12. Form: shallow basin with circular outline; convex sides and flat base. Dimensions: maximum diameter 28"; maximum depth below plow zone 12".

Feature 13. Form: shallow basin with nearly circular outline; walls have an almost straight-sided contraction to a slightly convex base. Dimensions: diameter 36-39"; maximum depth below plow zone 14".

Feature 14. Dimensions and shape of pit not available.

Feature 15: Form: shallow basin with oval outline; convex sides and nearly flat base. Dimensions: maximum at base of plow zone, 46 by 40 inches; maximum depth below plow zone, 10". The darkest area of the pit fill was immediately below the plow zone where it ranged in color from dark brown to black. The basal section of the fill was a light brown color.

Feature 16: Form: large basin shaped pit, roughly circular in outline. Dimensions: 66 by 72 inches in diameter at plow zone; maximum thickness 28" below plow zone. Pit fill contained two dark oval areas at northern and southern margins with a se;ctor of light gray sand between. The light colored area in the center was largely the result of mammal excavation, probably woodchuck. A portion of the west wall adjacent to the black area at the north edge was fire-hardened. Several large stones were found at the base of the pit.

It is obvious that considerable variation existed in the size and shape of the pits. In all instances it is not possible to be certain of the original pit form since plowing and other erosional processes may have removed portions of this upper section of the pit. Despite this, it seems reasonable that differences in function may be attributed to pits of varying depth. Many of the shallower pits may have served as fire basins which in turn would account for the presence of large stones that perhaps served as a prop for cooking vessels. Others perhaps served in the capacity of an oven while the primary function was doubtless the storage of corn, nuts or other wild plant foods.

Contents of the Storage Pits

Only to a moderate degree would the cultural materials and the plant and animal remains found in the fill of the pits, represent the original contents of the pits. The pits may well have been used for several seasons and then as their condition deteriorated, they would gradually be filled with wind-blown sand and dust as well as cultural debris and other refuse from

the adjacent area. In instances we may assume that the contents would be burned by brush or grass fires. In any event, the abundance of the storage pit raises a question as to the length of time the site was occupied. Can any change in culture be seen during the span of occupation? Was the site occupied by only one cultural group, or by several? To answer these questions a careful comparison of the contents of each of the pits must be made.

While not indicative of cultural affiliation, except in a very general sense, some information was obtained on plant and animal resources used by the prehistoric occupants of the sites. Their value, of course, lies in the insight they provide to the nature of the economy of the people. The identification of the plant remains recovered in the pits is present in summary fashion in Table 1. Animal remains are summarized in a similar manner in Table 2.

TABLE 1. FLORAL MATERIAL FROM DIETZ SITE (Da 12)

Feature Number	No. Hickory Nut Fragments	No. Wood Fragments	Other
2	11	1+	Bark **Prunus serotina?)** Corn—see note by H. C. Cutler
3		4	
5	50	1+	
6	1		
7	53	31+	Wild plum seed **(Prunus amer.)*** Acorn cast **(Quercus velutina?)***
8	8		
9	85	3	
10		2	
12	28	32	
13	1	32	
14	1?		
15	3	1	
16	9	18	

* Identifiiations by Professor J. C. Curtis
Hickory—**(Carya ovata)**. All materials charred.

TABLE 2. FAUNAL MATERIAL FROM THE DIETZ SITE (Da12)

Feature Number	Class or Species, etc.	No. Fragments Unidentified bone
1	Deer (half of disal end of metatarsal)	
2	Deer (mandible fragment); Shell (fragment	2 (1 burned)
3	Deer? (long bone fragment)	
6	(Native mouse, sp.?—pelvis, femur. Accidental?)	8 (7 burned)
7	Deer (skull fragment, humerous ?); Fish (sp. ?—1 vertebra, 4 ribs, 2 spines, 3 scales; Shell (5 fragments)	9 (4 burned)

8	Deer (1 mandible fragment, 1 burned tooth); Fish (rib)	9 (burned)
9		11 (burned)
12	Elk (antler fragment)	5 (burned)
15	Deer? (antler fragment)	3 (1+ burned)
16	Fish (1 rib, 2 spines); (small mammal?, tail vertebra)	22

NOTE: "Shell" in all instances consists of fragments of clam shells, none identified.
Deer—**Odocileus virginianus**
Elk—**Cervus canadensis**

Of greater value, for the identification of the culture are the remains of tools and utensils lost or discarded at the site. For the Deitz Site, primary reliance at this time must be placed upon the ceramic remains since artifacts made of other material were of very limited occurence. The presence of a small number of flint chips in most pits attested to the presence of a flint knapping industry but the tools were two in number and both were very crudely shaped. In Feature 7 a small flint pebble 42 mm. in length and 35 mm. in width and having a thickness of 15 mm., was retouched along one long edge to form a plano-convex section suggestive of a scraper. The irregularity of the edge and lack of usage marks or polish makes the specimen somewhat problematical. A small flint chip, 26 mm. long, 18 mm. wide, and 9 mm. in thickness, found in Feature 12 also bears a slight amount of edge retouching suggestive of a scraper.

Ceramic materials were of somewhat greater abundance although here again the sherds were primarily cord roughened body sherds of a grit tempered Woodland variety. It is obviously very difficult on the basis of the body sherds to determine which Woodland complex is represented at the site since little in the way of specific criteria separate the sherds of one complex from another. Despite this, whatever evidence such sherds produce must be used in order to add to the reliability of the cultural identification and temporal placement of the site.

Woodland Body Sherds. This group of ceramic material consists of the undecorated body sherds having a grit or sand temper and an exterior surface roughened by the imprints of a cord-wrapped paddle. The characteristics of the group of sherds are variable so that sorting would be possible on a

number of features even though these tend to merge or blend except in their extreme forms. However, the size of the sample—for we are dealing with but a total of 150 Woodland body sherds, is such that we should not expect significant results by finer classification. As the sample from the site is increased, a more refined analysis may be possible.

Tempering material is one variable characteristic and was examined with the aid of a binocular microscope. Some sherds primarily have sparse grains of quartz sand about 1-2 mm. in diameter combined with a sparse grit temper, 2-3 mm. in diameter, which consists of crushed quartz that may be derived from a granite. The usage employed here is to indicate by sand, grains of rock that are rounded and probably water-worn, while grit is used to indicate a rock that has been crushed and consequently has sharp, angular fractures. A few sherds have a micaceous temper which is combined with the sparse sand and grit previously mentioned. The association of the quartz and mica may be due to the granitic derivation mentioned. A small number of sherds have a relatively abundant use of mica, very fine in size, which gives a slight glistening to the surface. At the extreme range of the scale are those sherds with a very abundant grit temper generally not more than 3-4 mm. in diameter but through its very abundance creating a more crumbly texture to the paste than the more compact paste yielded by the sparser materials. In terms of tempering materials, the abundant, crushed quartzitic temper seems rather characteristic of the Woodland ceramics of the Aztalan variety (Barrett, 1933). This temper is at times accompanied at Aztalan by fine sand and occasionally micaceous material. On the other hand, sand and sparse grit as the dominant temper seems more characteristic of the Woodland pottery given the name **Madison Cord Impressed,** or at least that variant which is found at the Blackhawk Site (Da 5) in Madison (Baerreis, 1953).

Color is also an extremely variable feature. Many sherds are of a light color—tan or reddish-brown—with a uniform color through the entire wall thickness. Others are black, again having the same color through the entire wall thickness. There are, of course, intermediary shades between these extremes.

The total range in color would appear to be skewed toward the lighter side. The cord roughening found on the exterior varies from sharp, clear impressions to those that are partially smoothed over. The impressions themselves vary from those that are fine in texture, the individual imprints being about 1 mm. in width, to rather coarse, smoothly rounded imprints some 2-3 mm. in width. Such variation may be due to different types of cordage used as a paddle wrapping.

Mention has been made of the similarity of the body sherds to two different varieties of Woodland pottery. One additional feature, which is easy to record with precision, may also be used to aid in the determination of the cultural affiliation of the ware at the Diez Site. This is simply the thickness of the sherds. It is known that the characteristic vessels of different ceramic complexes vary markedly in thickness. Early Woodland ceramics such as **Marion Thick** (Griffin, 1952: 97) have a wall thickness ranging between 10 and 15 mms. The body sherds presumably of **Madison Cord Impressed,** on the other hand, range between 2 and 11 mm. While the utility of wall thickness as a discriminating feature in identifying pottery types is still in an exploratory stage, it is possible that a precise measure of wall thickness may be extremely helpful. If such a study is to be of utility it will probably need to be presented in greater detail than as a simple range, or even a range combined with an average thickness. Wall thickness is a variable feature even on a single vessel. The wall may be thick near the base and thin near the rim. Small vessels may have thin walls and large vessels thick walls. But the very fact that these variations occur mean that rather than simply complicating the procedure, a measurement of the range in wall thickness will in itself be a reflection of size of vessel and other aspects of vessel construction. Standardization of measurement is also important if comparisions are to be made. The maximum thickness of the wall of each body sherd was measured. By taking measurements of the total sherd series it was assumed that the range in thickness over the entire vessel would be obtained and if vessels at all of the sites are broken in a somewhat similar fashion, the measurements should be comparable from site to site. The measurements

for the individual Woodland body sherds, given according to pit number, are presented in Table 3.

TABLE 3. WALL THICKNESS OF WOODLAND SHERDS, Da12.

Thickness (mm.)	Feature No. 2	5	6	7	8	9	12	13	14	15	16	Total
3		1		5								6
4	4	1	2	13		2	44	2	1		9	38
5	13	7	2	19	1	1				2	5	50
6	3	6	1	16		1		3			7	37
7	4	5		1			1			1	2	14
8		2		1								3
9				1								1
10												1
Total	24	22	5	55	2	4	6	5	1	3	23	150

TABLE 4. A Comparison of Wall Thickness of Woodland Body Sherds from Three Wisconsin Sites.

Thickness (mm.)	Da12	Da5	Aztalan
2		2	
3	6	27	5
4	38	75	90
5	50	57	233
6	37	44	363
7	14	27	237
8	3	18	186
9	1	2	88
10	1	1	55
11		1	31
12			14
13			14
14			1
Total Sampe	150	254	2409
Arithmetic Mean	5.22	5.14	6.78

In order to make a preliminary estimate of the significance of vessel wall thickness, a comparison is made in Table 4 of thickness at the Dietz Site (Da 12) with cord roughened Woodland sherds from two other sites. One, the Blackhawk Site (Da 5) is a village site located in Madison which has been interpreted as being essentially an occupation site of the Effigy Mound culture (Baerreis, 1953). Comparison is also made with cord roughened Woodland sherds from the site of Aztalan (Barrett, 1933), these sherds being ones recovered in recent years by the excavations of the Wisconsin Archaeological Survey. The measurement of wall thickness was taken with the assistance of Mr. Richard Keslin. It is interesting to note that the arithmetic mean for the Dietz Site (5.22) is extremely close to that of the Blackhawk Site (5.14) and both are smaller than that for Aztalan (6.78). While this suggests a closer relationship between the Dietz Site and the Black-

hawk Site than to the site at Aztalan, it is probably not advisable to place too much stress on a single average. The similarity of the distributions might also be measured, for example, through the computation of the standard deviation and also compared with more precise tools but no further statistical computations have been made at this time since one further point that remains to be established at this time is the basic question as to whether such a feature as wall thickness is consistent within a single cultural complex. To establish this point additional detailed studies are needed of other sites of the Effigy Mound culture and of the late Woodland complex such as is found at Aztalan.

Decorated and Rim Sherds. To see what further light can be thrown on the cultural affiliation of the materials from the Dietz Site, it is advisable at this time to turn to the few decorated and rim sherds found. Considerable diversity is seen in this small group. The range is adequately illustrated in Figure 2 and we may use this grouping as our point of departure to represent the four categories of material requiring separate description.

(1). In Figure 2a we have a rather thick-walled Woodland type bearing horizontal cord imprints on the rim and having a series of short, vertical cord imprints placed on the interior and exterior edge of a slightly thickened but round lip. The wall thickness of the rim is 7 mm. with an increase to 9 mm. at the lip. The paste is compact but soft enough to be scratched with a finger nail and of a uniform tan to brown color with no color change toward the core. Fine quartzitic grit and quartz sand have been used as tempering material. The illustrated rim is from Feature 2. A sherd of similar type, but more crumbly in texture, was found in Feature 7.

(2). Figure 2b illustrates another Woodland rim sherd from a somewhat thinner walled vessel. The rim is slightly thickened to give a collored effect but this is primarily produced by accentuation consisting of a series of vertical, knotted cord impressions. Cord impressions are also found placed diagonally across the top of a rounded lip and extended 5 mm. down the interior of the rim. The wall thickness of the "collar" section is 7 mm. but below this point only 5 mm. The paste is com-

pact and somewhat harder than (1) since it can not be scratched by a finger nail, and is of a gray-black color. Similar tempering material was used. The illustrated sherd is from Feature 6.

(3). Feature 2c illustrates a true collared rim variety. The sherd is a rim section derived from the peaked portion of a vessel with a squared orifice. Undecorated on the exterior, the slightly flattened lip bears a notch of twisted cord impressions on the interior edge. The rim has a maximum thickness of 11 mm. at the base of the collar, tapers to 6 mm. at the lip, and has a thickness of 7 mm. below the collar. Like (2) it is harder than the finger nail and is slightly blackened on the interior but brown in color on the exterior. Both sand and grit are found as tempering material. The sherd illustrated is from Feature 7.

(4). Figure 2d illustrates a fourth ceramic trait consisting of small, miniature vessels. They are hard and compact, show only fine sand as tempering material, and have a smoothed surface rather than the cord roughening of the preceding varieties. Fragments were found associated with Features 7, 12 and 16. The specimen illustrated, from Feature 16, probably had a diameter at the mouth of about 6 mm.

One sherd can not be placed in the above categories. This specimen, from Feature 16, is a section of a smoothly flaring rim, though the lip is missing, having a cord roughened surface.

Conclusions

It is difficult, on the basis of the scanty material that has been reported, to provide an adequate cultural identification and temporal placement for the Dietz Site. This situation may be remedied by further excations at the site. In the meantime we can at least speculate about these problems and label our speculations working hypotheses for further research. No attempt will be made to make an exhausting review of ceramic material in these concluding remarks but two local ceramic types must be mentioned.

The variety **Madison Cord Impressed** (Baerreis, 1953) has been previously cited. This type was established on the basis of a collection obtained from the Blackhawk Site on the outskirts of Madison. Following an earlier suggestion of W. C.

McKern (McKern, 1930), it was indicated that this specifically represents the pottery manufactured by the builders of the effigy mounds. Further confirmation of this is to be seen in the vessel of **Madison Cord Impressed** recently discovered in an otter effigy in Dodge County (Wittry and Bruder, 1955). Another excellent example of this type was recovered from a linear mound in the Portage Group in Jo Daviess County, Illinois (Bennett, 1945, Plate 6). It is essential to stress that this is one of the pottery type used by the makers of the effigy mounds and one that, if the evidence from the Blackhawk Site is correctly interpreted, marks an early stage in the Effigy Mound cultural tradition which fits in the Middle Woodland Period. In other effigy mounds there have been found vessels with a pronounced collared rim (see, for example, McKern, 1930, Plate LXVI). Such vessels are moving closer to the type of Woodland vessels found at the site of Aztalan, but it is possible that the round orifice or mouth represents an earlier stage of collared ceramic development.

The ceramic material from the Dietz Site certainly resembles the Aztalan material more than it does other Woodland ceramics from Wisconsin. Yet some features, particularly variety (2) illustrated on Figure 2b, would appear to suggest that what is involved may be a moving away from the **Madison Cord Impressed** type toward the Aztalan ceramics. We therefore propose that at the Dietz Site we have an early stage in the development of the Aztalan Mound ceramic tradition including, as an ancestor, **Madison Cord Impressed.** To make a rough guess of the period represented, we may suggest that it is about 1250 A. D.

BIBLIOGRAPHY

BAERREIS, DAVID A.
1953 "Blackhawk Village Site (Da 5), Dane County, Wisconsin," **Journal of the Iowa Archeological Society,** Vol. 2, No. 4, pp. 5-20.

BARRETT, S. A.
1933 "Ancient Aztalan," **Bulletin of the Public Museum of the City of Milwaukee,** Vol. XIII, pp. 1-602.

BENNETT, JOHN W.
1945 **Archaeological Explorations in Jo Daviess County, Illinois.** (Chicago: University of Chicago Press)

GRIFFIN, JAMES B.
1952 "Some Early and Middle Woodland Types in Illinois," in Hopewellian Communities in Illinois, edited by Thorne Deuel, **Scientific Papers,** Vol. V, **Illinois State Museum.**

McKERN, W. C.
1930 "The Kletzien and Nitschke Mound Groups," **Bulletin of the Public Museum of the City of Milwaukee,** Vol. 3, No. 4, pp. 417-572.
WITTRY, WARREN L. and E. G. BRUDER
1955 "Salvage Operations at the Kolterman Mound Group," **The Wisconsin Archeologist,** Vol. 36, No. 1, pp. 3-11.

CORN FROM THE DIETZ SITE, DANE COUNTY, WISCONSIN

Hugh C. Cutler

Missouri Botanical Garden

A section of cob corn with only the basal parts of 8 pairs of spikelets (which had borne 16 kernels) was studied. The specimen had been found in Feature 2 of the Dietz Site. This single specimen is more like the older kinds of corn grown in the upper Mississippi Valley than the late Indian kinds, and is similar to even older material in Mexico, New Mexico, Arizona and Illinois. It is like some Hopewell corn from Site 17, Ansel and Knight farms, Calhoun Co., Illinois, in row number and grain thickness. Some modern tropical flints of Central and South America are not greatly different.

	Dietz Site	Northern Flint (Late Indian Corn)	Tularosa Cave, San Francisco (1000-1200 A. D.)	Tularosa Cave George-town 500-500 A. D.)	Tularosa Cave Pinelawn (400 B. C. + or — 200.)
Rows of grains	12	8	9.3	11.	13.4
Cupule width, mm.	6.5	9.5	7.1	7.5	5.5
Grain thickness, mm.	3.7	4.4	4.1	4.7	4.0
Width, lower glume, mm.	3.8	6.0			
Cupule depth, mm.	—.6	+.5	—.5	—1.0	—1.0

Number of rows of grain is probably the most useful single character for studying archeological corn. Throughout both North and South America most of the older kinds of corn which have been unearthed have been found to have a row-number approaching 14. In many regions, especially under adverse conditions, the number of rows of grains decreases (Martin et al, 1952) but does not drop below eight. The number of rows of grains can be calculated on this specimen and on corn grains by measuring the angle formed by lines par-

allel to the sides of the spikelets, in this case about thirty degrees, and then dividing 360 degrees by this number. Cupule depth, first used by Nickerson (1954), can only be measured on cobs but is a fairly reliable character when a bit of skill in measuring it is acquired. A table of characters of ancient Indian corn of the upper Mississippi Valley and of corn at the time of white settlement follows:

	OLD	NEW
Number of rows of grains	Usually 12 or 14	Usually 8
Ratio, grain width, thickness	Small	Larger
Grain shape	Grains narrow in comparison to width and length.	Grains relatively wide in comparison to width and length.
Lower glume	Usually narrow and relatively long	Usually wide and relatively short
Cupule width	Narrow	Wide
Cupule depth	Moderately deep	Usually raised above level of furrows between pairs of spikelets
Ears	Tapered at both ends, more at tip than butt.	Usually somewhat cylindrical.
Rows of grains	Occasionally irregular and not in straight rows.	Practically always in straight rows.
Shank diameter	Small	Large

References:

Martin, P. S., John B. Rinaldo, Elaine Bluhm, H. C. Cutler, and Roger Grange, Jr.
1952 "Mogollon Cultural Continuity and Change," **Fieldiana:** Anthropology Volume 40.

Nickerson, N. H.
1953 "Variation in Cob Morphology among Certain Archaeological and Ethnological Races of Maize," **Annals, Missouri Botanical Garden,** 40:79-111.

HAPPY BIRTHDAY.... The Collector's Corner was born one year ago and seems to be doing nicely, thank you.

A new type of meeting was held by the Milwaukee Chapter in December. The evening was devoted to the sale and exchange of specimens by members. HAROLD HEMPEL came all the way from Fall River to attend. The idea seems to have caught on and a bigger and better meeting of this type is being planned for next December.

The Society mourns the passing of CHARLES KOUBECK, one of our pioneer members. Charlie was one of the most regular attenders of the Milwaukee meetings. We miss him.

MELVIN FOWLER of the ILLINOIS STATE MUSEUM was in to talk to the Milwaukee Chapter in January on the exciting Modoc Rock Shelter dig. This is a site in southwestern Illinois with Archaic material dated as much as 9,000 years old. Seventy-two people attended and we sure thank Mr. Fowler for one of the largest and most successful meetings in many a year.

THE HEATH COLLECTION of American Indian material is being sold at LOGAN MUSEUM. It consists of some 3500 specimens, mostly Plains and Woodland ethnological pieces, but some archeological material also. Lots of pipes. Prices are quite reasonable. If you are interested write to Dr. Andrew Whiteford, Logan Museum, Beloit, Wis., or drop in at the Museum where the material is available for inspection.

We welcome into the Society the following NEW MEMBERS:

Walter Puza, 6118 W. Bluemound, Milwaukee, Wis.
Marquette County Historical Society, Marquette, Michigan.
John L. Pruett, 1100 N. Logan Avenue, Danville, Illinois.
Forrest L. Dabson, 611 N. Washington St., Janesville, Wis.
Gary Seering, 405 - 17th Street, Lincoln, Illinois.
W. G. Biederman, Masonic Home, Dousman, Wisconsin.

Thomas Gilcrease Foundation, Box 2419, Tulsa, Oklahoma.
Arthur E. Sylvester, 2414 North 41st St., Milwaukee, Wis.
Herman Schultz, Route 1, Box 334, Kenosha, Wis.
Martin Greenwald, 4567-A N. 30th St., Milwaukee, Wis.
Bradley Blake. 1317 Jersey Street, Stevens Point, Wis.
S. W. Westre, Sauk City, Wisconsin.
Tyler Bastian, 216 Haven Hall, Beloit College, Wis.
Wm. S. Laughlin, Dept. of Sociology and Anthropology, U. of Wis., Madison, Wis.
Tony J. Maurer, 1823 North 4th St., Sheboygan, Wis.
Tom Trautmann, Box 647, Prairie du Sac, Wisconsin.

It occurs to me that too much of this column has been concerned with the Milwaukee Chapter. How about the gang at Green Bay and Madison appointing some member to send in notes and news about your activities and members.

Bob Ritzenthaler, Editor
Public Museum
Milwaukee, Wis.

IT IS NOT LATER THAN YOU THINK

Mrs. Phillip H. Wiegand

About six years ago my husband, Phil, and I were persuaded by good friends, Doris and Bill Andrew, to join them on Sundays, hiking around the countryside, along river banks, in open fields, and of course at a few choice locations, in quest of Indian artifacts. Up until that time about the only artifact I was acquainted with was an arrowhead. Phil had been interested in archaeology ever since, as a boy, he found his first arrowheads along the shores of Okauchee Lake. It was not surprising, therefore, that we both became very interested in this new hobby. It is not later than you think—it is still possible to find Indian artifacts in fields which have probably been plowed for several generations. What a joy it is, on a beautiful day, to hike along some meandering river bank, always searching for some evidence of prehistoric man.

What was to me a thrilling experience occurred on October 1, 1950, while we were hiking along the banks of the Rock

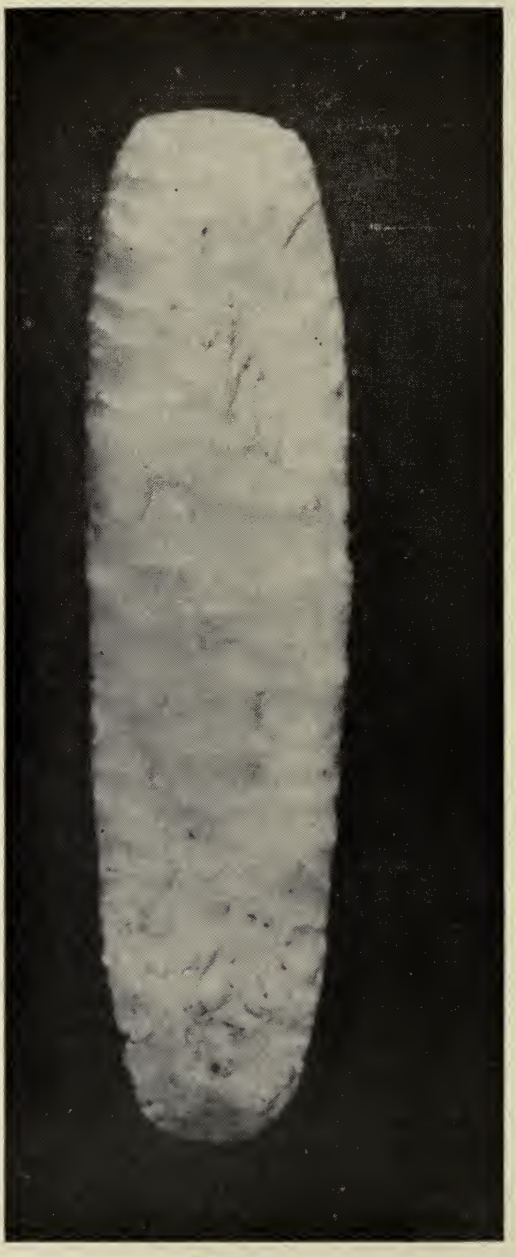


Figure 1

River near Ixonia. The Andrews and we had found quite a few points, knives, and scrapers that day, and we were just about ready to return home. I happened to be alone in one section of the field when I noticed something bone-white lying about ten feet up ahead. It passed through my mind that it was probably a sun-bleached bone of some sort. My attention was detracted when I found an exceptionally good, unbroken point lying right on hop of the soil at my feet. It has always been our undignified practice to let out an Indian war-whoop when a good specimen is located, so that all members of the group may gather around to see it in situ. This adds to the satisfaction of the finder, and prevents a lot of arguments. So I sounded off, and while waiting for the others to join me—it was a hot day and they weren't walking too fast—I strolled over to investigate the "bone." Imagine my surprise and pleasure to discover that the "bone" was a beautifully worked flint knife, almost six inches in length, and undamaged (Fig. 1). The precise flaking on the knife shows great skill in workmanship.

It stirs one's imagination to find such a momento of the past. How many hands had touched that knife before it turned up on that hot summer's day? How many have intervened since it was a practical tool in the hands of the original owner? Who and where are the descendants of that ancient people whose culture is represented by this object? How was it made, and what was it used for?

To anyone who is at all interested in our early Indians I recommend, without reservation, getting out on an open field, under a blue sky, with the hope in your heart that the Indian gods will favor you by leaving a trace of their people in your path. The materials you find and the sites and features you locate, if properly catalogued and recorded, will add to the supply of informative data available for archaeological study.

Interesting Wisconsin Specimens

STAMPED SHERD

Grit-tempered sherd decorated in circular stamped pattern probably with a bird bone. While rare in Wisconsin this type of decoration is fairly common in Illinois where it is associated with the Hopewell Culture. This specimen was found by Paul Scholz in Rock County.

COLLARED RIM SHERD

From the Paul Scholz Collection. Found at Bingham's Point, Lake Koshkonong. Pottery of this type has been found at Aztalan, but it is not Middle Mississippi Culture. It is similar in type to eastern Iroquois and Upper Republican of the Plains.

COPPER PENDANTS

A set of two pendants hammered from sheet copper and found by Barrett at Aztalan in 1919. Each is 2½ inches high, with tiny holes for suspension near the top on either side. It has been suggested by some scholars that the raised portion at the center is symbolic of the long-nosed god which appears in Middle Mississippi sites of the Southeast. From the Milwaukee Public Museum Collections, Cat. Nos. 26888-9.

THE WARNKE MOUNDS IN PORTAGE COUNTY

Bradley A. Blake

In July, 1955, two well-defined mounds were located on property belonging to John Warnke. They may be observed on the south-western quarter of the south-eastern quarter of section 26, Plover Township, Portage County, Wisconsin. (Fig. 1.)

The land which contains the mounds is triangular in shape and covers an area of approximately 24 acres. The southern boundary begins at the north shoulder of Highway 54, five miles west of Plover, (which is paralleled to the south by the Green Bay and Western Railroad), then proceeds northward to an abrupt drop-off which overlooks a body of water to the north. The river bank at this point is roughly 50 feet above water level.

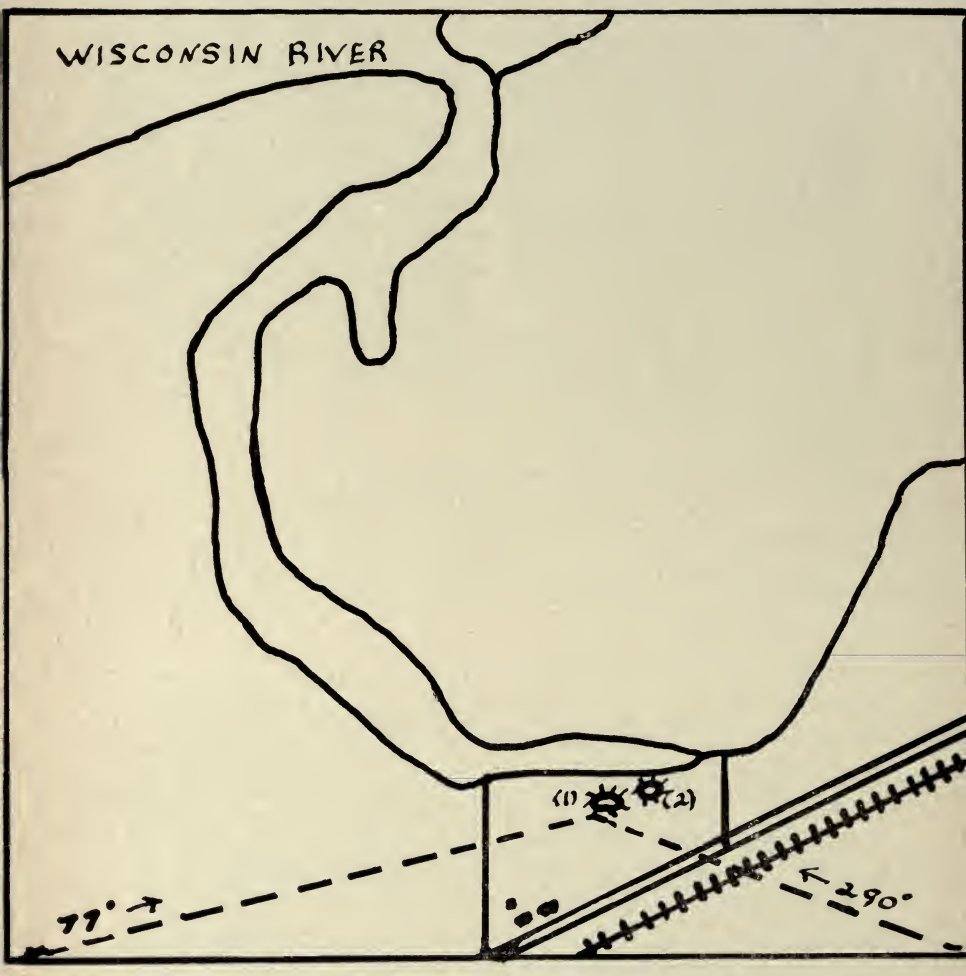
It is interesting to note that the water observed below the bank is not the river proper, but rather an elongated bay which has as its source a small creek. The bay flows from east to west within section 26, then proceeds northward, entering the river at the mid-point of the north-central one half of the same section.

The mounds are located on a slope which increases in elevation from east to west. The east boundary is covered by a dense growth of scrub oak which tends to obscure a deep depression which forms a natural pathway to the edge of the water. The land along the west boundary is now under cultivation and contains a few scattered oak trees and several farm buildings in the south-west corner.

Both mounds are sheltered by standing oaks which measure, on the average, 22 inches in circumference. The oaks grow not only on the perimeter of the mound site, but also upon and around the mounds themselves, which may account for the mounds retaining their contours as well as they have (Fig. 2).

The first mound encountered is located north of and at a distance of approximately 341 feet from the mid-point of the southern boundary (Highway 54). The mound lies at a distance of 56 feet from the high banks which overlook the bay. This mound of the conical type is 30 feet in diameter and measures six feet above ground level. Unfortunately there has

WARNKE MOUNDS



BUILDINGS

RAILROAD (G.B.&W.)

HIGHWAY (54)

MAGNETIC HEADING

MOUNDS

SECTION 26

PLOVER TOWNSHIP

PORTAGE COUNTY

WISCONSIN

Figure 1

Figure 2

been some destruction (several small pot-holes).

The second mound (Fig. 2) is located slightly north and east of the first mound (54°), a distance of one hundred and twenty feet. This mound has slightly different dimensions; it measures 43 feet in length by 32 feet in width, and reaches a height of four feet four inches at its highest point, then slopes eastward to two feet six inches at its lowest point. This mound has received less destruction that the first, but has been disturbed to some extent.

A systemized ground survey of this area has produced pottery sherds and flint flakes; however, no excavation will be undertaken until all available information of this and adjoining sections has been examined and classified.

This paper is the first of a series of reports or archeological sites and findings in Portage County. The last known work was conducted by G. L. Collie and R. H. Becker in 1912. * The research is under the direction and sponsorship of the Social Science Department of the Wisconsin State College at Stevens Point.

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* See "Wisconsin Archeologist", Vol. II, No. 2, October, 1912.

ADDITIONAL MATERIAL FROM THE REIGH SITE, WINNEBAGO COUNTY

Neil J. Ostberg

Following the excavations at the Reigh Site reported in the March, 1954 issue of **The Wisconsin Archeologist** (Vol. 35, No. 1, pp. 1-36), the site was visited and portions of the disturbed deposit screened in an attempt to find additional artifacts. In the course of this work, two additional burials were located at the margins of the gravel pit excavations. The specimens were brought to the Milwaukee Public Museum for examination by Dr. Robert Ritzenthaler and also to the University of Wisconsin where they were seen by Dr. David A. Baerreis. The following account of the material recovered at the site includes comments by both of the individuals mentioned. Photographs of the specimens were taken at the Milwaukee Public Museum.

The screening operations resulted in the finding of glass beads as well as sheet copper or brass tubular beads and bangles that are clearly considerably later in time than the burial materials as a whole. This account is confined to the specimens found with the two burials which are perhaps of approximately the same age as the burial complex previously reported upon. New traits, however, not previously described are added to the assemblage.

One burial, comprising the remains of an adult female (Fig. 1), consisted of a secondary burial. It was found at the north end of the gravel pit in sandy soil, resting immediately upon a gravel layer. With the burial were placed a series of some forty spherical copper beads ranging in diameter from 3 to 11 mm., three baroque pearl beads, and a small, flat disc bead of shell (Fig. 2). These items would appear to have formed a single necklace. With them, and perhaps used as part of the same necklace, was a more unusual specimen (Fig. 3). Having the appearance of marine conch shell, its form tapered from a broad, flat base 13 mm. in diameter to a bluntly tapered point. The artifact is 34 mm. in length. The broad end bore two engraved lines which encircled this area. A tapering perforation in the base of the broad end meets what has the appearance of a transverse groove on one side which is perhaps a transverse perforation that has worn through the specimen during

Figure 1

Figure 2

Figure 3

its period of use. A second transverse perforation is located a short distance above this groove near the blunt tip of the specimen. Three bird claws (identified by the Milwaukee Public Museum as eagle), bearing no perforations or other signs of human modification, and resembling those of the great horned owl found in the earlier excavations were also placed with the burial. The last specimen found with the burial might be designated a chipped stone knife, and is 56 x 34 mm. in maximum dimensions. Although of the same shape and proportions as the projectile points found at the site, it lacks notches or other modifications to produce a stem.

Figure 4

The other burial, also of an adult, appeared to have been in an extended position on the back. It was located at a depth of approximately 3.5 to 4 feet at the east side of the gravel pit in a sandy soil a short distance above a layer of gravel. With this burial were two projectile points (Fig. 4), similar to those previously found at the site in having shallow notches at the corner or side a short distance above the base. The maximum dimensions of the points were 25 x 50 and 24 x 52 mm. Associated with the burial was also a small fragment of a copper awl or needle.

The two burials described above were located upon the opposite sides of the gravel pit from the burials described in he first report on the Reigh Site. Despite the physical separation from this group of burials, they may still be part of the same burial complex.

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Milwaukee, Wisconsin
Incorporated, 1903

For the purpose of advancing the study and preservation of Wisconsin Indian Antiquities.

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EARLY MAN IN WISCONSIN
and
SUBSOIL ARCHAEOLOGY

By Eugene F. Dietz

If one examines a representative collection of Wisconsin stone projectile points, he may find a few specimens that are very similar to some of the early man points of the western states, namely, Clovis, Folsom, and Plainview. These easily recognized point types have been given their chronologic positions in western states' archaeology, and have become famous in demonstrating that man has lived in North America for quite some time. The sites at which these points are found in the West are covered with soil which has been moved by wind and water, and have been exposed to view by subsequent erosion of the land surface. Geologists have dated these sites as having been occupied prior to and during the Mankatoan advance of the Wisconsin glacier. After the retreat of this glacier, profound climatic changes occurred in the western states; the climate became exceedingly dry and much soil was moved about by the wind.

The presence of these early man points in Wisconsin indicates that people having the same cultures of the far west lived in this state also, and perhaps during the same periods of time. However, unlike the West, since the retreat of the Mankato glacier, Wisconsin has had a moist climate and the surface soils have stayed in place. In fact, most of our southern Wisconsin soils have stayed in place since the retreat of the Cary glacier, which came down into southern Wisconsin a long time prior to the Mankato advance. The last glacier, the Mankato, extended southward into Wisconsin a few miles below Lake Superior and along the shores of Lake Michigan, and southwestward into Minnesota.

Folsom

Clovis

Plainview

The projectile points of these early hunters in Wisconsin are at present found in the unglaciated district and on the lands formerly occupied by the Cary glacier. I do not know whether any have been found on the lands occupied by the Mankato glacier.

The Clovis points are rather large and nicely tapered from point to base, and are characterized by a fluting of the faces from the base upwards. These have been found associated with the remains of elephants in the Southwest. The Folsom points are shorter than the Clovis, and the fluting more pronounced. They have been found associated with extinct bison remains in the Southwest. The Plainview points are fairly large and their general shape is that of the Gothic arch. Their bases are usually thinned by the removal of broad flakes, and they are sometimes flatly fluted by this flake removal. These have also been found associated with extinct bison.

In the above named categories wide variations from the classic types occur, so that there may be gradations between the Clovis and Folsom and between the Folsom and Plainview. There are non-fluted Folsom points that closely resemble small Plainview specimens.

The chronological succession of these point types in the West is Clovis earliest, followed by Folsom, followed by Plainview. In addition Eden and Scotts Bluff points succeed the Plainview or are aberrations from the Plainview type.

In Wisconsin we have examples of the above mentioned three principal categories, with wide variations from the "normal." In addition we find a type of point that is known as the "lanceolate." This point type is shaped similar to the Plainview excepting that the vertical sides of the Gothic arch are drawn in to a narrowing base, and may be gently curved by the drawing-in process. The base of the lanceolate point may or may not be thinned by special basal flaking. However, in some cases the base is neatly flaked to form an inward curve. These lanceolate points vary greatly in size from moderately small to quite large. So far as I am aware, the lanceolate type is not found in the West.

The common feature of all of the previously discussed projectile points is that none of them were notched in any way for attachment to the shaft. The binding sinews, if such were used, must have been wrapped around the shaft and the point for some distance up from the base. This would lead to abrasion and cutting of the sinews along the point's edge, and to protect these sinews many of the early man projectile points were ground along the lower sides and across the base to make a less sharp binding edge. However, many points of the Plainview and lanceolate categories were not ground along the basal edges and along the base proper.

We have in Wisconsin, then, four main categories of projectile points which may be assigned to the earliest known hunters of the North American continent. The exact time-span of early hunter occupation is not known, but it is believed to have been thousands of years. It is remarkable that a tradition of using unnotched points should have extended over such a long period of time. Several archaeological and anthropological conclusions might be drawn from this fact, chief of which is the possibility that the early hunters have all derived from one common stock out of Asia. They brought in their

point making techniques, and slowly diffused over both the Americas, carrying on their cultural traditions for a long period of time. Later invasions from Asia brought in new languages and traditions.

In Wisconsin we find the Old Copper people the first to use the notched projectile point. These people may have been successors to the Paleo-Indian hunters, or they may have been co-existent with the last of them. This has not definitely been worked out from stratigraphy. The Old Copper cemetery at Oconto has yielded carbonaceous material tentatively dated by carbon 14 analysis as being between 7 and 8 thousand years old. The points of the Old Copper people are somewhat similar to the Plainview points in basic shape, but a notch occurs on each edge above the base giving the dart maker a chance to criss-cross the binding sinews. As with other categories, wide variations occur in the specimens both in size and general outline. No attempt was made at fluting the sides. These points may have been the natural succession in the change from unnotched to notched; some were ground on the basal edge. Evidently the Old Copper people were here when the Mankato glacier was melting back; they may have obtained their copper from the raw moraines of the retreating glacier.

Having given only the barest outline as an introduction to the significance of these early hunter points that are found in our state, I shall take up the matter of what I call "subsoil archaeology," and show how the amateur may utilize this in his search for what may be discovered concerning the stone tools used by the early men who lived here in the distant past. This I shall begin by giving my own experience, and attempt to show how I was drawn into it, and by what circumstances of observation.

For the last 16 years I have owned a farm * just west of Madison near a large marsh. This location was very attractive to former Indians, and I have picked up many examples of their flintwork. For a number of years I picked up these pieces simply as a "collector." Often I would plow up sub-

soil as I worked the farm, and I observed unbroken artifacts and bunches of chips on the freshly turned furrows. I was impressed by the obvious fact that these clusters of chips and artifacts had somehow settled down into the earth. Examination of the subsoil under these groups of chips showed that many more of them of similar stone lay below the plowed zone, some to a depth of 18 or 20 inches.

In order to satisfy myself further on the matter of this settling of chips and artifacts, I dug a trench six feet wide and three feet deep in a portion of the farm that had never been plowed. I used a small trowel in cutting back the face of the trench, noting carefully the positions of the chips and artifacts that came to light. I found that these man-made objects were positioned from an inch or two below the surface down to a depth of about 20 inches. At this depth I found, in the particular strip of land through which I was cutting, that most of the small stones were initially mixed through this glacial till soil had moved downward to a layer of concentration, which I call the small stone layer. This layer corresponds to the beginning of the "B" horizon of the soils men, the soil above being called the "A" horizon. The soil in the B horizon is more clayey and less friable than that in the A horizon.

As a result of this dig, I came to the conclusion that throughout the past there had been natural forces at work in this woodland soil which slowly buried the small stones contained in the upper portion of the soil and the flint chips and artifacts formerly dropped by men. By their own weight these small stone objects cannot gravitate downward through the A horizon. In this article I shall not go into the causes of this downward movement except to say that it does occur, as may be seen by observation. The degree of downward movement is affected by the length of time since the artifacts and chips were discarded on the surface of the ground. The more recent material is still close to the surface; the very ancient material may have gravitated down to the top of the B layer and into it. I have found chips 3½ feet deep in sandy woodland soil. It will take many observations by many persons before much

can be definitely stated concerning all the soil and biological factors involved in the time element of this downward movement. In this article I am giving it only as a fact of observation and drawing conclusions that may be of interest to the amateur archaeologist.

Since we do find a few flint points in Wisconsin that were made by the early man hunters, it seems probable that intensive search of the south portion of the state might bring about the finding of some of the "pure" dwelling sites on which these people lived. From such an uncontaminated site one might find the flint artifacts that were used in the "household" operations, and from these deduce the amount of cultural skill that these early hunters had in other respects besides the making of beautiful projectile points.

One of the most productive sites in the Southwest has been the Lindenmeir site in northeastern Colorado. This Folsom dwelling site was covered by a heavy deposit of wind-moved soil. Here was found a multitude of small scrapers having graver ears on the cutting edges, small gravers for incising bone objects, slender side scrapers, small stubby scrapers, large side and end scrapers, twist drills, flat spalls of flint, finely chipped to thin cutting edges, spoke shaves, flint knives, and, of course, the distinctive Folsom points. Here was an "assemblage" of stone artifacts belonging to one culture. From the multitude of flint tools of special design one may deduce that the objects made from perishable materials such as bone, leather, and wood must have been many, and perhaps artistically fashioned. Some modern Indians have been equipped with but a few flint tools, yet turned out beautiful objects of art. Had Folsom man reached a culmination in manufacture and art for his day and age, and did he exceed the skill of the modern Indians? These are questions that someday may be answered.

Recently, in Massachusetts, the dwelling site of an eastern branch of Folsom man has been uncovered. * Here was found

* S½ SE ¼ Sec. 30 Tn 7 N R 9 E

almost an exact duplication of the flint artifacts found in Colorado. Such widely separated manifestations of a "primitive" culture makes one wonder how it came about that the same cultural type should spread so far without change in tools. Were these men then free to migrate without too much hindrance, or were culture patterns static throughout a widely spread population?. At this site the Folsom artifacts were found to have gravitated downward in the soil well below plowsole level.

Here in Wisconsin we stand halfway between Colorado and Massachusetts. Folsom points have occurred as surface finds here. Some day we might find them in situ.

To date, I believe, no Clovis dwelling site has been found in the West, nor any dwelling site of Plainview age. Early man dwelling sites are hard to locate in the arid western states because of the coverage by windblown soil after occupation. However, here in Wisconsin the dwelling places of the early hunters were not covered by loess. The soil surface stands today as at the time of occupancy, with the exception of meandering and refilling of creek beds, the silting of some shallow lakes and marshes, and the growth of bog in depressions. Some hilly soils may also have been displaced by erosion along with concomitant artifacts. But there are many square miles that have not changed much since the time of the retreat of the Cary glacier. I feel confident many of the early man sites in this state are still intact awaiting discovery.

Apparently the earliest inhabitants of Wisconsin used the streams as avenues of transportation, and occupied the river banks and lakeshores. So did the later peoples. It is on these much used sites, where the chips lie thickly that, with luck, one may find a fluted point or lanceolate point, or a tiny scraper or graver. However, here would be a poor place to find an assemblage of chert tools assignable to only one culture. To find a more pure site of the early hunters, one will have to search near the small streams, ponds, and marshes. Perhaps these people lived in larger groups during the inclement weather, and moved away from the "home" grounds

during the warm weather for better hunting. It is at the "temporary dwelling sites of a few families that one may hope to find the traces of a pure culture of early hunters.

I am not overlooking the difficulties of finding the unmixed dwelling sites of the earliest hunters. The much used sites were contaminated by artifacts of later peoples. On any site the artifacts were deposited so long ago that the most of them have sunk below the action of the farmer's plow. One might be standing on the recently plowed ground of an ancient hunter encampment and not find a particle of evidence; all of the distinctive artifacts including most o;f the flint chips are below in unturned soil. However, the situation is not hopeless, as I will illustrate from a recent experience.

Early last summer, while hoeing the garden, I found a small stubby scraper that appeared identical to some I had seen illustrated in an article on Folsom material. I marked the spot in my mind, determined to do some digging there later. Heretofore I have found a number of small arrowheads in this garden, which is about a quarter acre in extent; however, I had never noticed many chips; only one now and then. One could not say that the garden had been heavily occupied in the past. It was far from being a collector's paradise. Needless to say, I looked forward to the time later when I could dig and perhaps find a fluted point site.

A sandscreen 8 feet long of ⅓ inch mesh, two saw horses to support it (Fig. 1), a sharp long handled shovel, and a pair of leather gloves constituted the equipment. Working by the theory that the old material had sunk into the subsoil, I shovelled aside the plowed layer and sifted only the subsoil. Stirring the soil by hand soon brings it through the screen, leaving the larger chips and artifacts behind.

After commencing the screening, immediately I began to recover chips and artifacts. I continued operations across about 30 feet of garden taking out an eight foot section. I saved everything that looked like manmade material. Interestingly, shortly after a few feet of digging, I began to ob-

tain less and less on the screen. Pretty soon my returns were almost negligible. I reversed my direction and came back towards the richer spot I had first found. As I approached that spot returns began to pick up. I set stakes marking where the digging was profitable. Continuing in this same direction I again reached barren ground. I continued to work back and forth across the garden on both sides of the rich location.

When I had finished staking out the productive place, it turned out to be a circular area about 10 feet in diameter. Incidentally, on the first dig through I found the remains of an ancient firepit. This was in the circle of artifact enrichment. Only a few bits of charcoal remained in the greyish brown soil.

By saving all of the chips, I was able to later determine the likelihood of the recovered artifacts having been manufactured on the site. I found chips to match the little stubby scraper; also chips matching the material in the points I ascribe to the Plainview culture, and chips to match the rest of the scrapers. There were also chips that did not match up with any of the artifacts; these may have resulted from the manufacture of expended points or lost scrapers or knives, or may have been dropped by earlier or later residents.

From the results of this dig I feel that I have recovered an assemblage of flint artifacts belonging to the Plainview culture. It represents the remains from only one household which may have occupied the spot for a relatively short time. It is not a great deal to show for a couple of weeks of spare-time digging in the hot weather of our Wisconsin autumn. But I believe it was worth the effort. The limited assemblage of artifacts here pictured on the plat will not permanently establish the artifactural relationships of the Plainview culture in Wisconsin, but it is a start. More digs in the future through the same type culture material will further establish these relationships.

Perhaps the reader wonders whether I found other projectile points in sifting the subsoil of my garden. I did. I found the bases of two lanceolate points. These were away

from the focus of artifact concentration. No chips were found to match the white chert of these points.

There was also a beautiful example of side notched point of Old Copper culture made of black chert. Chips matching this chert were found in several places including the focal site.

Another Old Copper point was found within the Plainview site. No chips were found to match this point anywhere. It had a battered tip, as though it had struck a stone at the time of discharge. If it had been recovered by the owner, he would have saved it for repairs.

No corner notched nor stemmed points were found anywhere in this subsoil dig, although I had often found these on the surface. Apparently, none of these later type points had had time to seep into the subsoil depths. It appears to me now, from my limited experience with subsoil archaeology, that the soil acts as a time filter; the deeper artifacts are older than those above. In the absence of accumulative stratification, which is the case with many open sites in Wisconsin, the average depth position of a group of related chert artifacts should be indicative of their relative age in the archaeological time scale. The local conditions at one site should be given full consideration.

One does not need to find much on the surface to indicate that there may be much more below. After completing the garden dig, I went into a field beyond and found just one lonesome chip. I laid it to one side and started to dig out the subsoil and sift it. After a day or two of digging and sifting I found that I had explored a place where some long forgotten man had sat and made flint tools. Over an area about eight feet square I found numerous chips but no artifacts. Trial digs adjacent to this spot revealed nothing more.

Because one must first remove the surface layer to a depth of 6 to 8 inches, subsoil excavation is rather slow work; but it does have its rewarding surprises. I offer it to the amateur archaeologist as a means of discovery of the sites of occupation of early man in Wisconsin.

SUBJECT MATTER FOR FURTHER READING

Point varieties in the western states

Early Man in America, by E. H. Sellards. University of Texas Press, Austin. Price $4.50. A comprehensive volume on the finds of early man over the two Americas.

Natural covering of flint artifacts by soil

Additional Information on the Bull Brook Site, Massachusetts, by Douglas S. Byers. American Antiquity, Vol. 20, No. 3. Price $1.75 per number from the Society for American Archaeology, Logan Museum, Beloit.

Natural Burial of Artifacts, by E. F. Dietz. Same issue.

Flint tools of the Folsom culture

Bull Brook—A Fluted Point Site in Ipswich, Massachusetts, by Douglas S. Byers. American Antiquity, Vol. 19, No. 4. Contains excellent photographs and descriptions of the distinctive artifacts of the eastern Folsom culture.

Soil profiles in woodland soils

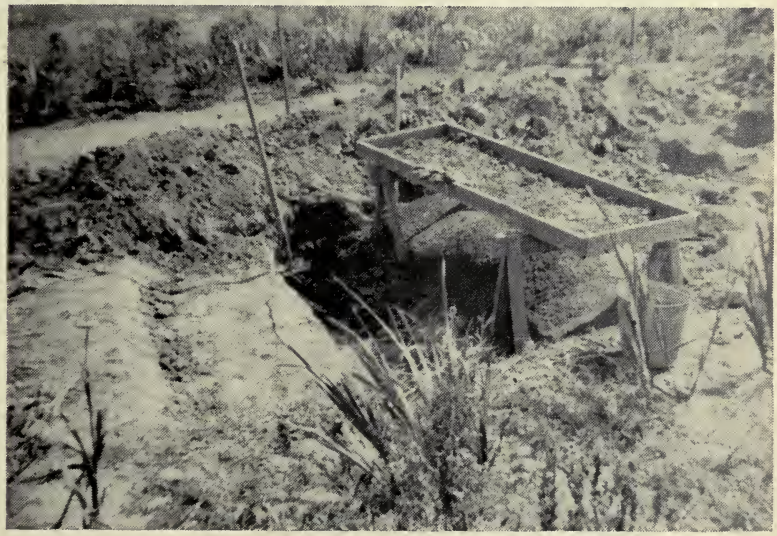
Recent textbooks on soils cover this subject. U. S. D. A. Yearbook, 1938, P. 972, gives short account of separation of soil horizons. Available in public libraries.

Glacial geology and succession

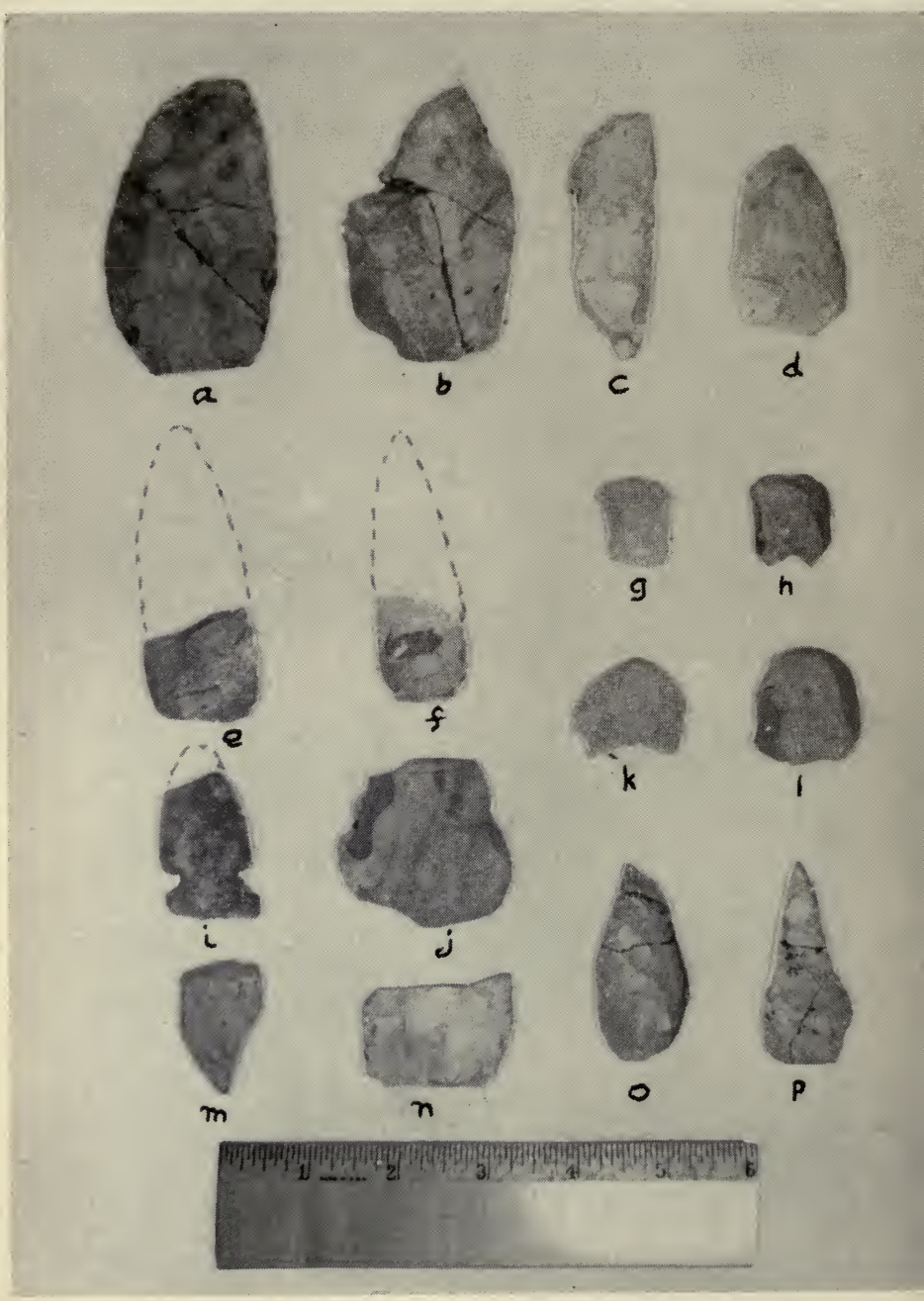
Outline of Glacial Geology, by F. T. Thwaites, University of Wisconsin. 1956 edition contains latest information on succession of Cary, Valders, and Mankato stages of Wisconsin Glacier.

Old Copper People

The Old Copper Complex: An Archaic Manifestation in Wisconsin, by Warren L. Wittry and Robert Ritzenthaler. American Antiquity, Vol. 21, No. 3.



Equipment used in making subsoil exploration. Note how surface soil has been shovelled away, exposing subsoil to be shovelled onto sandscreen.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DESCRIPTION OF ARTIFACTS ON PLATE

a. Skinning knife for large game; scraping tool for heavy hides.
b. Same as **a**, but apparently broken in manufacture.
c. End scraper; portion may be lost.
d. Knife similar to **a**, having sharp cutting edge. Chert matches **c**.
e. Base of "Plainview" point. Not ground on edges. Chips match this point found in focal site.
f. Similar to **e**. Matching chips found in focal site.
g. "Stubby" small scraper, the finding of which led to the digging project. Matching chips were found in focal site.
h. Stubby scraper similar to **g**. Resharpened with minute chipping on working edge.
i. Old Copper point found in focus of artifact concentration. No chips matching this found. Probably an "intrusive."
j. This tool made from a large flake. Has a thin finely worked edge minutely chipped from one side only. Looks like a planer; Lower face flat and straight. Could have been used to shave off thin strips of wood for making baskets. Chert identical to **f**.
k, l. Two similar scrapers having finely chipped convex working edge. May have been used for scraping out an object such as a wooden bowl. Edge of **l** well worn from use. Chert in both similar to **g**.
m. Scraper with cutting edge on left, and obtuse edge above. Obtuse edge has fine chip removal as though from actual scraping of hard material. Chert matches **c** and **d**.
n. Basal portion of what appears to have been a large two edged knife.
o. Thin edged small knife. Chert similar to **f** and **j**.
p. Has appearance of projectile point or reaming tool. However, would serve admirably as a shafted skinning knife for tough-skinned animals such as muskrat, beaver, or woodchuck; or as a knife to make preliminary incisions in large game animals before using knife **a**. Edges worked sharp and thin. Chert similar to **n**.

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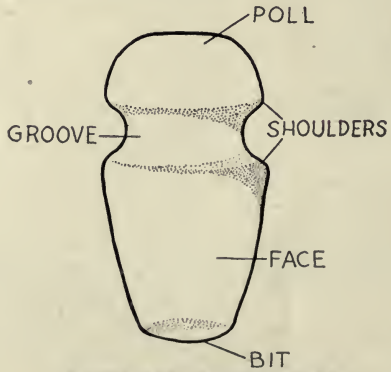
SOME VARIETIES OF GROOVED AXES IN THE WOODLAND AREA

By W. C. McKern and Robert Ritzenthaler

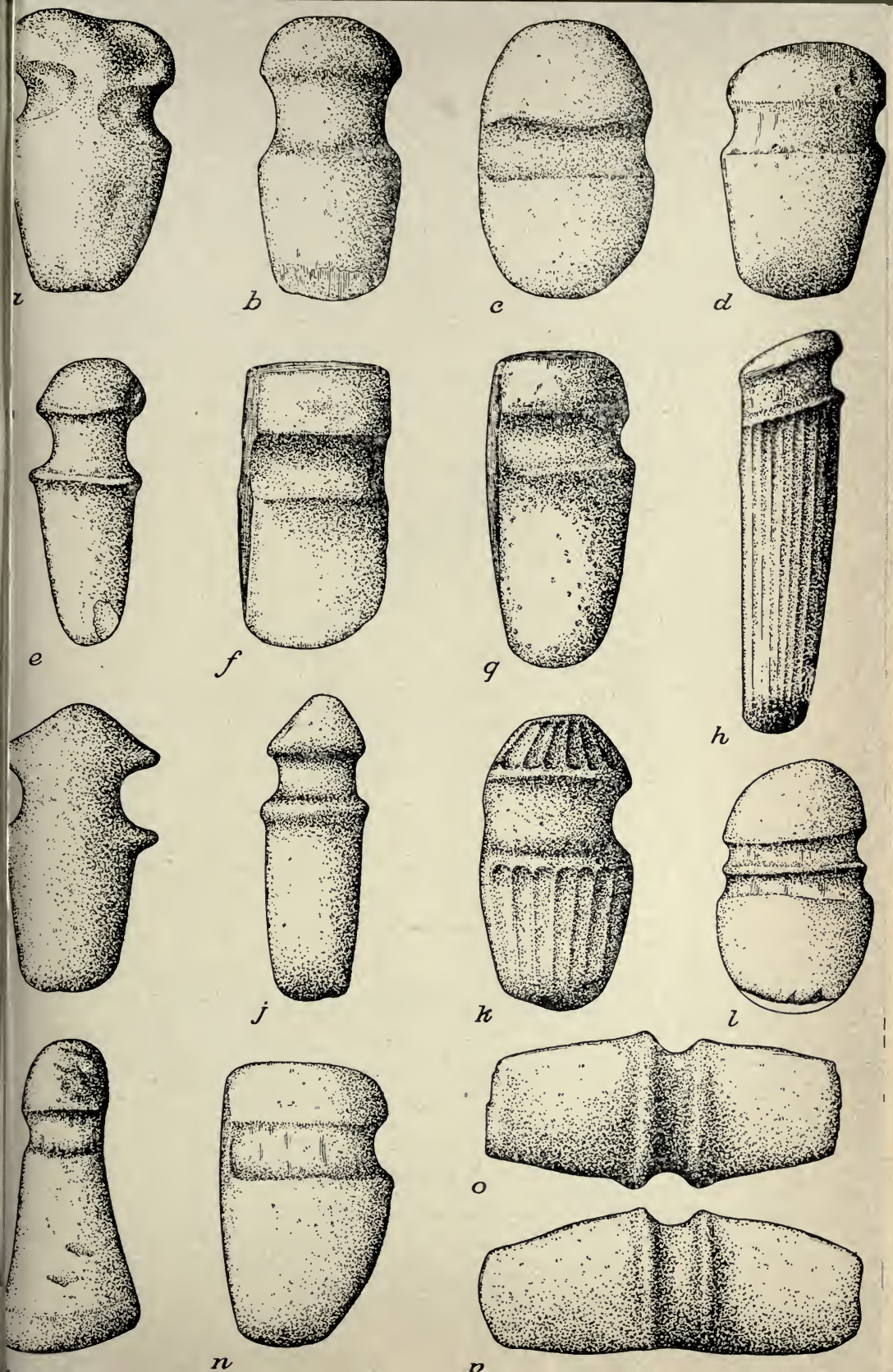
We are describing and illustrating these types of grooved axes with a dual purpose in mind. First, we think it will aid the collector in the more complete identification of his material. Secondly, it may stimulate the collector to examine his axes more closely and report to us any seemingly unusual types. We wish to stress that we are here concerned only with grooved axes (including notched varieties), not celts (un-grooved axes) or adzes (those with a flattened side).

The grooved ax was a tool used for chopping. The stone head was hafted to a wooden handle in a variety of ways, judging from the variety of hafted grooves. If the hafting groove runs completely around the ax we refer to it as a "wholly-grooved" ax. If only three sides are grooved it is called a "three-quarter grooved" ax. With the exception of the rather rare Keokuk type, which is grooved on two sides only, all grooved axes are of these two types. Some axes are found with a diagonal groove, some with a double or spiral groove, and some are flanged (a raised rim above or below the groove). Some axes are notched at the edges rather than grooved.

While grooved axes are found throughout the eastern half of the United States, some types have a restricted locale. The



PARTS OF THE GROOVED AX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fluted ax, for example, is limited to the Wisconsin area, the Michigan Barbed to Michigan, and the Keokuk type to Iowa and western Illinois.

Nearly all the ones shown on the accompanying plate are known to be products of the prehistoric Indians called "Woodland." They are all made by the pecking and polishing technique, and from igneous rock.

The drawings for this plate were made at the Milwaukee Public Museum.

PLATE DESCRIPTION

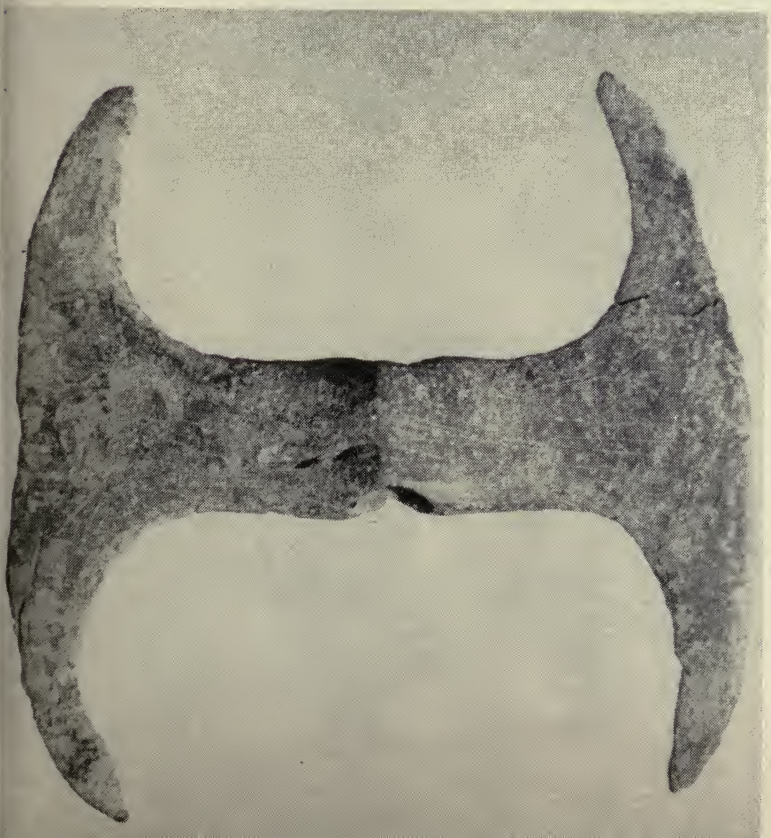
Type

a. Side-notched. Common throughout the Woodland area.
b. Wide-waisted wholly-grooved. Common throughout the Woodland area.
c. Three-quarter grooved pebble. Common throughout Woodland area.
d. Wholly-grooved. A characteristic type found throughout the Woodland area.
e. Narrow-flanged. Rare in Wisconsin.
f. Keokuk. Limited to Iowa and western Illinois. Thus far none have been reported for Wisconsin.
g. Three-quarter grooved. Most common and characteristic type for Wisconsin, but these occur all over the Woodland area.
h. Diagonally-grooved. The diagonal groove occurs on both fluted and unfluted axes, but also on the three-quartered variety. The direction of the groove indicates that all were hafted with the handle pointed to the ungrooved side. The diagonal-grooved ax is common throughout the Woodland area.
i. Michigan Barbed. Restricted to the Michigan area. None reported for Wisconsin thus far.
j. Wide-flanged. Rare in Wisconsin.
k. Fluted. Flutes can occur on either face or poll, or both (as with this type called "eccentric"). Limited to the Wisconsin area, and fairly rare even here.
l. Double-grooved. In instances the grooves are joined to form a spiral and may be referred to as "Spiral-grooved." Fairly rare.
m. Expanded-bit (or Flared-bit). Relatively rare in Woodland area, very rare in Wisconsin.
n. Contracted-bit. A fairly common type found throughout Woodland area.
o. Symmetrical Double-bit. Occurs throughout Woodland area, but very rare.
p. Straight-based Double-bit. Occurs throughout Woodland area, but very rare.

Interesting Wisconsin Specimens

COPPER HARPOON

A rare example of four-barbed harpoon. Length 8¼ inches. Found while digging sewer at Fond du Lac, at a reported depth of 8 feet. Milwaukee Public Museum specimen No. 2167.



COPPER BANNERSTONE

The only known example. Butterfly type with 5 inch wings, 5 inch length, with hole 7/16 inches in diameter. Milwaukee Public Museum specimen No. 43402.

A SOCKETED COPPER HARPOON

Robert J. Hruska

This specimen was found in the summer of 1954 by the writer in Menominee County, Michigan. It occurred about 15 feet from the Menominee river where a section of the bank had broken away. The specimen was at about a 45 degree angle with its point down. The base was 11 inches below the surface and did not seem to have been moved from its original position. Its total length is 4-3/16 inches. The widest point, being just at the barb, is 1-1/16 inches. The barb seems to be cut away from the body of the piece as is done by present day

blacksmiths. The narrowest part, just under the barb, is 5/8 inches. From the point of the barb to the point of the harpoon is 2 inches. The base of the socket is 7/8 of an inch wide, and runs 1-7/8 inches in to the base. It is deep and well formed. A shaft of the size that would fit the socket would not stand the rollings of a large fish so it seems that the 1/8 inch square hole in the base was used for the purpose of securing a line to the head rather than to fasten it to the shaft. This way the fish could have been played by hand with much less danger of loss. This method is still used on sturgeon and other large fish. On the other hand, the square hole would be likely to fray the line, so it is possible that it represents a rivet hole, and the spear shaft was secured in the socket with a copper rivet and perhaps reinforced with a thong wrapping. The entire piece shows heavy acid corrosion..

THE ALBERT GREEN HEATH COLLECTION

A Recent Acquisition of Logan Museum

Robert C. Alberts

Certainly the Albert Green Heath Indian Collection requires no elaborate introduction to many readers of the Wisconsin Archeologist: this outstanding collection ranks high among the foremost assemblages of Plains and Great Lakes Indian costumes, weapons, utensils, ornaments and ceremonial paraphernalia anywhere. What may come as news to some readers, however, are the facts that this well-known collection, over twenty-six hundred major specimens, has recently been acquired by the Logan Museum of Anthropology of Beloit College and that the Museum is presently offering for purchase to sister institutions a large portion of the collection's duplicate materials.

Three factors in particular contribute to the outstanding significance of the Heath collection: its remarkably broad range, ethnologically and technologically; the fine state of preservation of its specimens; the splendid documentation on provenience of its materials.

A few facts and figures will reveal the collection's impressive variety and breadth.

In areal coverage, an abbreviated list of the tribes whose 19th and 20th century material culture is represented with particular completeness includes the Plains Sioux, Blackfoot, Crow, Cheyenne, Arikara, Arapaho, Comanche and Apache; the Flathead and Nez Perce of the Plateau; the Chippewa, Sac and Fox, Menominee and Winnebago of the western Great Lakes; and most of the tribes of the Iroquois area. Represented by scores of other fine specimens are the Blood, Gros Ventre, Mandan, Ute, Ponca, Oto, Kansa, Pawnee, Osage, Choctaw, Kickapoo, Potawatomi and Huron. There are respectable basic collections from such far-flung areas as California (Yurok and Pomo), the Southwest (Hopi and Navaio), the Pacific Northwest Coast (Haida and Tlingit), Florida (Seminole)—and even a fine sample of Alaskan Eskimo items.

In costumery the Heath collection is especially rich, including literally hundreds of superior examples of fringed and beaded buckskin dresses, shirts, vests and leggings, bedizened with cowries and olivella shells, silver brooches and bobs, ribbon applique and quilling. Among the costumes are many rare specimens, such as several highly prized Ghost Dance dresses, one of them an Arapaho example in fringed buckskin trimmed with eagle and magpie feathers and painted thunderbirds. (This particular dress was for many years exhibited at the Denver Museum of Natural History and has been evaluated at over one thousand dollars.) Possession of such rarities by Logan will make its already fine collection unique.

The endless racks, cases and boxes of exotic apparel give the second floor of Logan Museum, where the Heath collection is now being sorted and checked by Museum Director Dr. Andrew Whiteford and his staff of Museum and student assistants, the aspect of an Indian ready-to-wear emporium. In one department is footgear of fascinating variety, from snowshoes to rare Siouan burial moccasins with beaded soles. In another is headgear: Colorful moosehair roaches, elaborate headdresses by the dozen, and one especially choice Sioux

warbonnet whose handsome double trails of eagle feathers reach to the ground. (An offer of three hundred dollars has been declined for the latter prize.) Then there are beaded buckskin gauntlets, attractive dance garters, and colorful Arapaho dance bustles. An Indian squaw or brave from almost any ethnographic area north of Mexico could these days step in to Logan and straightway be properly outfitted for almost any sacred or secular occasion.

In the category of weapons the Heath collection contains an arsenal of bows and arrows, lances, clubs, hatchets, knives and tomahawks that Geronimo would envy. (In fact the collection includes a bow presumably used by that notorious Chiricahua Apache sometime before his surrender in 1886.) The clubs and tomahawks range well back into the 19th century, and in variety run from ten-pound skull-crushing bludgeons fashioned from hardwood boles, and sizeable boulders rawhide-bound to flexible hafts, through a large assortment of metal-bladed hatchets and beaded-handled tomahawks, to less lethal persuaders suitable for squaw-hushing.

To list a fair sample of remaining categories of the collection's inventory would require some pages. Certainly the hundreds (literally) of fine catlinite pipes merits mention, complete with their original, elaborately ornamented and inlaid stems, and sometimes with their original owner's tobacco pouches complete with fragrant contents. Likewise present by the hundreds are carved spoons and ladles—wood, horn, bone, stone, ivory and metal. There are drums of every description, including a choice Menominee Dream Dance specimen, together with flutes, whistles, turtle shell and deer hoof rattles, and an array of other more or less musical instruments.

In sacred and ceremonial paraphernalia the Heath collection is also rich, notably in possession of numerous medicine bags and bundles, and as well in its fine examples of Winnebago and other peyote equipment.

While such utilitarian items as papoose boards, saddles, parfleches, wooden bowls, metal containers and baskets are abundant, ornamentalia is also represented in wide variety by

necklaces, rings, silver bracelets, armlets, brooches and bangles. And then there are wooden masks and cornhusk masks, and dolls and games, snow snakes and sashes, in short, whatever it is, there is a good chance the Heath collection has it in a choice of colors, sizes and proveniences.

Behind this fabulous collection, once appraised at over forty thousand dollars, and long known for the singularly fine quality and condition of its individual items, lie the equally interesting stories of its collector and its acquisition by Logan Museum.

From his boyhood years in Chicago in the 1890's, Albert Heath developed an abiding interest in the American Indian. After attending Williams College and the University of Chicago, where he was later named an Associate in Philosophy, Heath began to concentrate almost full time on rounding out his growing collection of Indian material culture. Years of residence at Harbor Springs and Cross Village, near the Straits of Mackinac in northern Michigan's Emmet County, led Heath to intimate acquaintance with the area's Ottawa population, and early in life he was becoming an expert on contemporary Indian culture as well as a discerning collector. Later on his Ottawa friends bestowed upon him honorific tribal chieftainship as "Chief Flying Cloud," a distinction of which he was always consummately proud.

It was typical of Heath that his provenience notes were thorough. The splendid file catalogue which now enhances the collection, together with the thick packets of letters, affidavits and documents pertaining to he precise origin and identification of particular specimens, indicate how far-ranging were Heath's searches and how great was his determination to secure the best of choice, authentic materials. To acquire one especially fine New York Mohawk item, a gaming bowl, it is said that Heath pursued his reconnaissance and negotiations for more than twenty-three years.

But Heath was more than a collector. He knew the Indians and their ways and their lore. By many of the Indians among whom he lived and pursued his collecting he is remembered

with deep friendship—and as a man who understood and respected them in a day when there were few who knew them well and fewer who troubled with their problems.

When Albert Heath died in 1953 at the age of sixty-four, he had led a full and productive life. He had been an intimate of such notable collectors as George Heye, founder and patron of New York's Museum of the American Indian (and the Heye Foundation), and of such extracurricular Indian enthusiasts as author-actor Irving S. Cobb and sometime Secretary of Interior Harold Ickes. To all his colleagues his death was a great loss, but to his Indian friends it was perhaps most profound. Many of them still travel to south-side Chicago to the Heath home for visits (possibly pilgrimages would be the word) to the former residence of their cherished brother and champion.

With all deference to Beloit College and its Logan Museum, the reader is entitled to wonder how an extraordinary collection like Albert Heath's came to be acquired by any but a large, metropolitan institution. The answer lies foremostly in the profound generosity of the Heath family and in their desire that the collection serve fruitful scientific and educational ends.

Early in 1955, as it happened, the morning mail at Logan Museum brought a routine notice of impending sale of an outstanding collection of Indian materials, assembled over the last half-century by the late Albert Green Heath. Indications were that the asking price would run into five figures and the notice was perfunctorily discarded.

Soon afterward, however, a letter arrived from Mrs. Helen Halsted Friedmann of Chicago, cousin of the collector and niece of Mr. Charles Heath (father of Albert Heath and owner of the collection following Albert's death). Mrs. Friedmann, a Beloit College alumna of '18, indicated to Logan's Director Whiteford her hopes that the museum might acquire the collection, but at the time neither she nor Dr. Whiteford could see the most remote possibility of this becoming a reality.

Interested at least in viewing the collection, nevertheless, Dr. Whiteford and a group of Beloit College's anthropology majors went to Chicago and were immensely impressed with the ethnological importance of the Heath materials. Anthropologically, their mouths watered, and the situation was frustrating in the extreme. Meanwhile, professional dealers and larger institutions were offering substantial bids for all or portions of the collection—bids in the general neighborhood of the original asking price, and far in excess of what Logan could hope to afford. Moreover, the promised deadline for bid decisions was approaching and with it all chance for the Museum to obtain the collection would go by the board.

Throughout negotiations, Mrs. Friedmann and Mr. Charles Heath were anxious that the collection should go to an institution where it would not be broken up or stored among countless cases of similar items, but would instead retain its identity as the Albert Heath Indian Collection and be fully exploited for education of students and research by professional anthropologists. That Beloit College's Logan Museum (and the conjoined Department of Anthropology) admirably fulfilled these qualifications was obvious, and to facilitate the purchase by Logan the Heath family, ignoring higher bids, at last offered the collection to the Museum at a fraction of its most modest value. *

Sad to say, however, even this drastically reduced price, nine thousand dollars, was out of the question, and Logan Museum could not have acquired the collection had it not been for a final general concession by the Heath family. This was an arrangement whereby the Museum would receive the entire collection immediately with permission to sell off enough duplicate specimens to pay the reduced purchase price. Under these conditions Beloit College, in eleventh hour negotiations just before the deadline for notification of outside bidders,

* Evaluation was undertaken by Denver Museum of Natural History's well-known anthropologist and specialist on Indian arts and crafts, Frederic Douglas, long time friend of Albert Heath, who also aided the Logan staff in sorting and selecting since the collection has come to Beloit.

gratefully accepted the collection for the Museum; and then began the Gargantuan task of transpo;rting the collection from Chicago, unpacking it, checking, sorting and selecting items for sale and items for Logan's permanent Heath Collection.

From collectors, museum curators and specialists long familiar with specific items in the Heath inventory came a deluge of purchase requests from all over the United States and Canada. To the present time, in accord with the original intentions of the Heath family to put the collection to the broadest educational use, negotiations for purchase of duplicate items have been conducted only with institutions (and not with individuals). A large number of transactions have been consummated and the goal of realizing the purchase price merely through disposal of the collection's surplus materials is rapidly being achieved by Dr. Whiteford.

The ultimate denouement of this story will of course be Logan Museum's possession of an altogether outstanding collection of American Indian materials—a collection which will be a handsome credit to the sixty-two year old institution, a splendid testimony to the foresight and generosity of Mrs. Friedmann and Mr. Charles Heath, and a highly appropriate memorial to the work and aims of Albert Green Heath. Beloit College and the Logan Museum staff look forward with pleasure and pride to that time in the not too distant future when it will be possible for the readers of this journal and their friends to visit the permanent installations of the Albert Heath Collection.

EXCAVATIONS AT THE PRAWATSCHKE MOUND GROUP IN DODGE COUNTY

Arthur Niehoff

On the Prawatschke Farm in northeast Dodge County there is a group of 27 conical mounds, some of which are quite large for eastern Wisconsin. The site is near Mayville on the eastern edge of the Horicon Marsh. The mounds were surveyed by Dr. Bruder (Wisconsin Archeologist, Vol. 32, No. 4, 1951) and were reported to vary from 1.5-14.78 feet in height and from 9 - 77 feet in diameter.

The Milwaukee Public Museum sponsored an exploratory excavation at the site during October-November 1955. The work was carried on by Dr. Robert Ritzenthaler and Arthur Niehoff from the museum as well as by Dr. E. G. Bruder and Kermit Freckmann of the Wisconsin Archeological Society. Since it is expected that further work will be done in the spring and summer of 1956, and since no cultural material was obtained from the one mound excavated, the following report will be primarily descriptive and to be considered tentative.

One of the larger mounds, No. 17 of Bruder's survey, was selected for excavation. The size was important, that being the one aspect of this mound group that was somewhat unique to this part of Wisconsin. Mound 17 was approximately 40 feet in diameter and five feet in height. Since the time for field work was limited to several weekends it was considered unwise to start work on one of the largest mounds. Secondly, this mound was chosen because there was no evidence of its having been disturbed. Also its preservation was good since it was across the fence from the adjacent cow pasture.

The top of the mound was staked off and a five foot trench, running east-west, was begun. The trench was started on the uphill edge of the mound and continued through about two-thirds of its diameter. It was felt that erosion might have extended the downhill side of the mound, in which case the true center as it had been built would have been somewhat to the east of the present center. The topsoil level was from five to six inches deep. At a depth of about one foot, to the east of

the center of the mound, a concentration of large field stones (Fig. 1 & 1a) was encountered. These were closely packed, extending approximately 5.5 feet in an east-west direction and 8.5 feet north to south. The depth of the rock cap from top to bottom was about 2.5 feet.

At a depth of about 3.4 feet from the surface of the mound in square O-4 the fragments of a child's skull were found. These were partially burned. They were not lying beneath

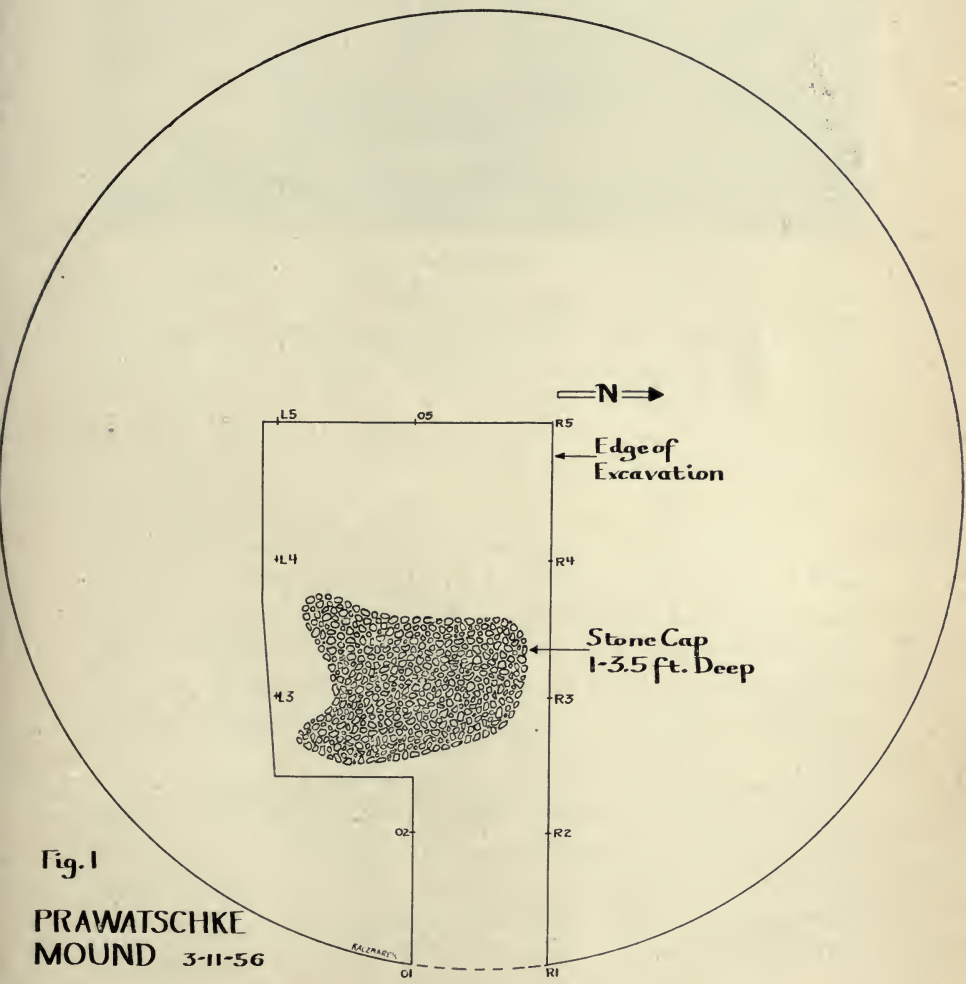


Fig. 1

PRAWATSCHKE MOUND 3-11-56

Figure 1a

the stone plat, but about four feet to the west of it. Also at this level fragments of charcoal began to appear. The charcoal became more heavily concentrated as the excavation progressed downward. There were complete cross-sections of burned logs as much as eight and ten inches in diameter.

The main feature of the mound was a burial pit which began at a depth of 6.2 feet below the surface and went down to 7.2 feet, where a sterile layer of gravel and clay began. The pit was not in the expected location. Instead of being under the stone cap, it was situated parallel and adjacent to the west end of the stone cap. The dimensions of the pit were 7.5 feet north-south and 5 feet east-west. The shape was elliptical.

At the top level of the burial area bone fragments were found, including a crania and other bones of a raccoon. These bones were disarticulated, being found in different parts of the pit. Most of the other bones found in this layer were human though many were in such small pieces it was difficult to be sure of their identity. Adjacent to the east side of the pit there

were two extended burials, laying side by side, heads oriented to the north. West of these two skeletons there was a skull and what seemed to be the articulated torso of another individual. There was evidence of burning throughout the pit, parts of all the skeletons having been destroyed by fire. It seems probable, in this regard, that there were three articulated skeletons, all extended, in the pit (Fig. 2), the third one having been consumed by fire from the rib cage downward. In the

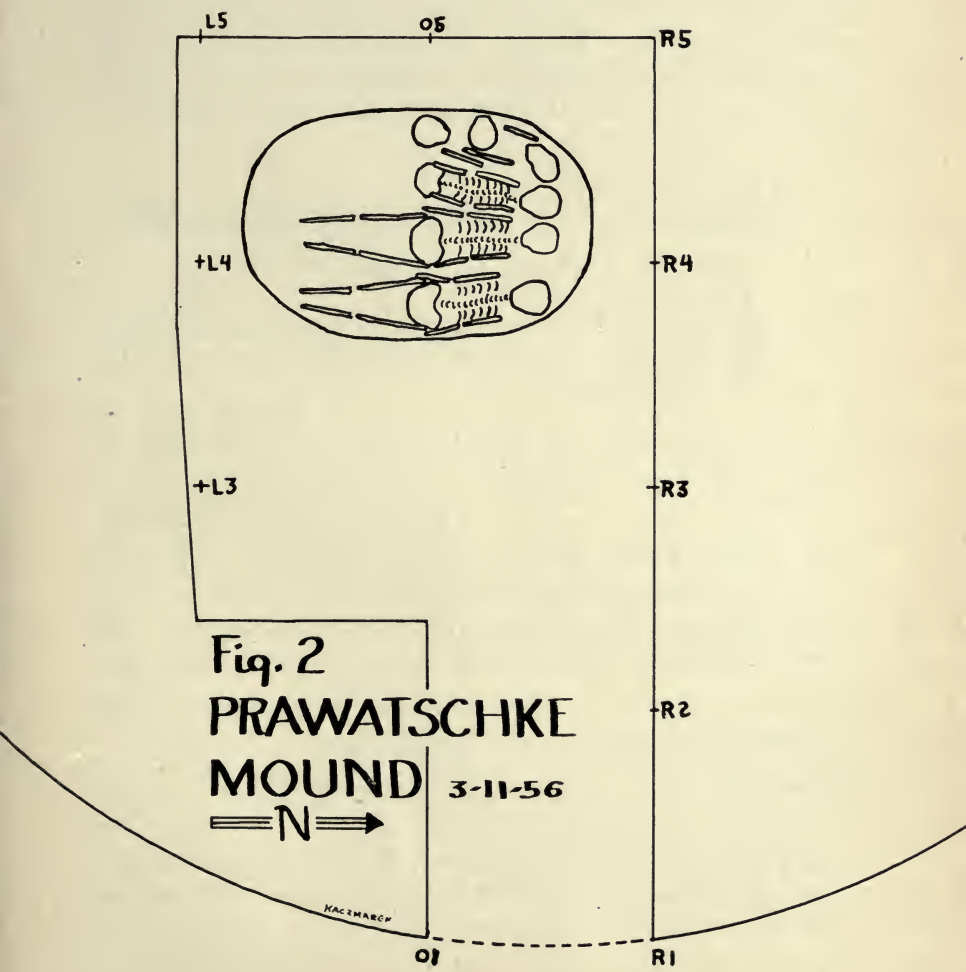


Fig. 2
PRAWATSCHKE
MOUND 3-11-56
N

northwest corner of the pit there was a concentration of disarticulated bones, including three crania.

In the pit itself, as well as throughout the entire mound, there was found no cultural material whatsover, with the exception of three or four flint chips found in the upper fill. All skeletal material was in a poor state of preservation, partially from burning and partially from decomposition.

Dr. Bruder ran a trench through another mound during the excavation. It is not indicated in his survey but lies between mounds 17 and 15 on his map. He reached sterile soil at the bottom of the trench but found nothing whatsoever. This mound was not closed, it being planned to extend the trench during the next season.

MINUTES OF THE MILWAUKEE CHAPTER MARCH MEETING

1. It was decided to list the officers of the Green Bay and Madison Chapters and dates and plans of their meetings in the "Archeologist."

2. The Madison and Green Bay Chapters are to be notified of any projects, etc., discussed at our Milwaukee meetings in the future.

3. Mr. McKern stated that the Advisory Council was only an advisory board and any action must be decided upon by three officers of the Society. In the future all bills, etc., will be O. K.'d by three officers at the meeting.

4. It was decided that a brief resume of the meetings of each meeting be published in the "Archeologist."

5. The subject of an appropriate insignia for the Society was discussed. Previously it was decided that a Fluted Axe design be used. Mr. McKern stated that he would have several drawings made of some for selection of one to appear on the stationery, application blanks, etc.

6. A letter from Mr. Warren Wittery was read, in which it

was stated that Dr. Baerreis mentioned that the SAA meeting would be held in Madison in 1957, and thought it would be more appropriate to hold the annual dinner meeting at that time in Madison. The suggestion was made at the meeting in Madison and they voted to invite the W. A. S. to hold the 1957 meeting and dinner at Madison on that 1957 date—probably the first week in May, 1957.

7. The report of the Nominating Committee was discussed during the Board Meeting and later read at the Regular Meeting. Mr. McKern made the motion that the officers nominated be accepted and the vote carried.

8. Mr. Lewis Rasmussen gave a lecture on the Caribou Eskimo.

CONGRATULATIONS TO KIRK WHALEY, elected President of the Wisconsin Archeological Society at the March meeting of the Milwaukee Chapter.

ELLIS BURCAW, Director of the Neville Museum, Green Bay, was on a field project in Mexico this spring.

THE NEW COVER OF THE WISCONSIN ARCHEOLOGIST was designed by Edward Green, staff artist at the Milwaukee Public Museum. We think it has a new, smart look—how do you like it?

DR. DAVID BAERREIS is running a student archeological dig for the University of Wisconsin in South Dakota this summer.

MEMBERS OF THE MILWAUKEE CHAPTER continued the excavation of the conical mounds in Dodge County begun last fall.

DR. WILLIAM GODFREY and MR. WARREN WITTRY will be supervising a field crew of Beloit College students excavating the Wakanda Park mounds in Menominee, Wisconsin, this summer.

Of late, our membership has been growing by LEAPS AND BOUNDS. We welcome these NEW MEMBERS into the Society:

Alfred K. Smith, 1635 N. 47th St., Milwaukee, Wis.
Dr. Wm. Godfrey, Logan Museum, Beloit, Wis.
Aug. J. Mier, 739 Cleveland Ave., Batavia, Ill.
James Porter, 101 Chicago St., Stoughton, Wis.
Cookie Cimbler, Hurricane, West Virginia.
Carlos Cortez, 1807 Manitowoc Ave., So. Milwaukee, Wis.
R. H. Blohm, 795 E. 3rd North, Provo, Utah.
Robert Davenport, 1704 N. Halstead St., Chicago, Ill.
Gus Spankus, 2710 N. Sherman Blvd., Milwaukee, Wis.
Dr. Alan Merriam, Dept. of Sociology, University of Wis., Milwaukee, Wis.
Harold Stahl, 1608A W. Wells St., Milwaukee, Wis.
Parnell Been, Route 1, Grantsburg, Wis. **(Life Member)**
Paul Mann, Lima, N. Y.
Mr. Wm. Oestreich, 1025 Mineral St., Milwaukee, Wis.
Mrs. Wm. Oestreich, 1025 Mineral St., Milwaukee, Wis.
Mrs. Jack Slowery, 1022 College Ct., Madison, Wis.

Let's keep it rolling. How about sending us the name of a friend who might be interested in joining. Or better still, sign him up yourself—$1 will cover his dues for the rest of the year.

Bob Ritzenthaler, Editor
Public Museum
Milwaukee, Wis.

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THE WISCONSIN ARCHEOLOGIST

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A PRAWATSCHKE MOUND GROUP, A WOODLAND BURIAL COMPLEX, Arthur Niehoff
THE COLLECTOR'S CORNER

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THE WISCONSIN ARCHEOLOGIST

Published Quarterly by The Wisconsin Archeological Society

New Series

MILWAUKEE, WISCONSIN, SEPTEMBER, 1956

BIGELOW - HAMILTON SITE "I"

Dr. George I. J. Dixon, Wisconsin State College, Stevens Point
Bradley A. Blake, University of Wisconsin
Patricia Scribner, Wisconsin State College, Stevens Point

This paper is the second in a series of surface studies of mound sites in Portage County, Wisconsin. [1] The research was stimulated by the work of G. L. Collie and R. H. Becker and constitutes a redefinition of one area of their archeological survey of Portage County published in 1912. [2]

A surface survey of the "Bigelow Site," reported in the Collie-Becker study of 1912 was used as a demonstration study for a class in archeology. Interestingly, the demonstration study turned up some additional material. [3] Some slight errors appeared to be made in the original study. In addition, the early survey failed to observe and report the complete mound group. This was probably due to an attempt by Collie to report on a rather extensive area in a limited space of time. Figure 1 is the map of the mound group resulting from our survey. The inset in Figure 1 is a reproduction of the mound group as reported by Collie and Becker in 1912. The discovery of additional materials indicated a need for further study and a re-statement of the original report. The present paper re-defines the original study and brings the work up to date. [4]

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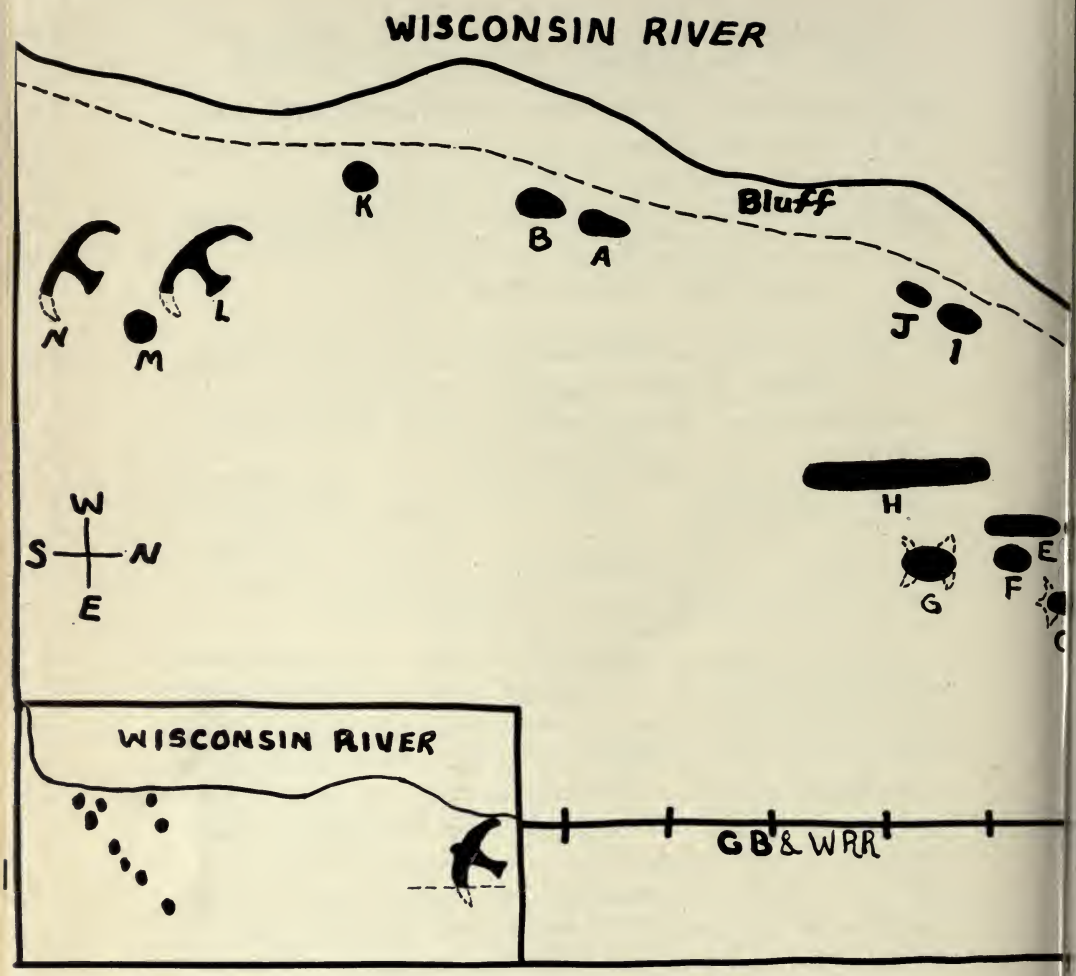
1 B. A. Blake, "Warnke Site," **Wisconsin Archeologist** (March, 1956)

2 G. L. Collie and R. H. Becker, "Researches in Wood and Portage Counties; Bigelow Group," **Wisconsin Archeologist**, II (October, 1912), 50.

3 All field exploration is being conducted under the auspices of the Social Science Department, Wisconsin State College, Stevens Point.

4 The original study by Collie and Becker has been redefined, and the site re-named Bigelow-Hamilton Site "I". A second field report is in process and will be entitled Bigelow-Hamilton Site "II".



The Bigelow-Hamilton mounds have been located alphabetically. Mounds "A" and "B" are placed out of sequence intentionally because of their significant size and central location. The remaining mounds are located in proper sequence and run from northeast to southwest as indicated in Figure 1.

The mounds are located in the northeastern quarter of the northeastern quarter of section 21, Plover Township, Portage County, Wisconsin.

The mound site is located on the eastern bank of the Wisconsin River, and is approximately 100 feet above water level. The site overlooks a major change in the course of the river. The river at this point bends from south to west-southwest.

The river channel immediately below the mound site is approximately 300 feet wide, and is seperated from the channel proper by a series of five islands, the largest being ¾ of a mile long and ½ of a mile wide. It should be mentioned at this point that the largest island in the group has been examined both by air and ground survey but has not as yet produced anything relevant to this study.

The field in which the mounds are located covers an area of approximately 40 acres. This field is flat and weedy, but contains a dense concentration of scrub pine east of the mound grouping.

The western boundary of the mound site overlooks the river and is composed of a thin line of oak and pine trees which run north and south. The northern boundary is represented by a fence line which has been re-enforced with a scattered row of oaks which run east and west. The eastern boundary terminates with the road bed of the Green Bay and Western Railroad. The southern boundary of section 21 is referred to as the Old River Road (sometimes called the Old Plover Cemetery Road).

The mounds follow a north-easterly, south-westerly line as indicated on Figure 1 and are close to the high river bank, and the closest is on the edge of the bank itself.

The mounds are of various shapes and sizes. All linear mounds run north and south; two bird effigy mounds face southwest.

Each mound has been carefully measured and located with reference to the other mounds and permanent land marks.

Mound "A", the first of the series, runs north and south and is centrally located. This mound is the most prominent of the group and is outstanding when viewed from a distance. (See enclosed diagram.) Mound "A" is 110 feet long and 55 feet wide and measures four feet from the summit to ground level. Mound "A" lies on the very edge of the river bank.

Mound "B" lies five feet south of mound "A". This linear mound which runs north and south is 53 feet long and 51 feet wide and measures three and one-half feet from the summit to ground level. Mound "B" lies on the very edge of the river bank.

Mound "C" of the effigy type, lies in the north-eastern corner of the grouping. This mound resembles a turtle and is 63 feet long and 27 feet wide and measures 16 inches from the summit to ground level. This mound runs north and south and terminates with a wire fence which represents the northern boundary of this quarter section. Mound "C" lies 225 feet east of the edge of the river bank.

Mound "D" lies 64 feet west of mound "C". Mound "D" is a conical mound and is 43 feet long and 33 feet wide and measures 16 inches from the summit to ground level. This mound lies at a distance of 175 feet east of the edge of the river bank.

Mound "E" lies 10½ feet south of mound "D". Mound "E", of the linear type, is 100 feet long and 27 feet wide and measures 16 inches from the summit to ground level. This mound may have been an effigy in that it faintly resembles a bear. Mound "E" lies 175 feet from the eastern edge of the river bank.

Mound "F" lies six feet east of mound "E". Mound "F" of the conical type, is 40 feet long and 34 feet wide and measures 20 inches from the summit to ground level. Mound "F" lies 205 feet from the eastern edge of the river bank.

Mound "G" lies 48 feet south of mound "F" and is similar in construction to mound "F". Mound "G", of the conical type, is 46 feet long and 42 feet wide and measures 16 inches from the summit to ground level. Mound "G" lies 225 feet from the eastern edge of the river bank.

Mound "H" of the linear type, is the longest mound of the group. This mound lies 59 feet west of mound "G". Mound "H" is 286 feet long and 34 feet wide and measures 16 inches from the summit to ground level. Mound "H" lies 75 feet from the eastern edge of the river bank. [5]

Mound "I", of the linear type, lies 48 feet west of mound "H". Mound "I" is 35 feet long and 14 feet wide and measures 15 inches from the summit to ground level. Mound "I" is partially obscured by scrub oak and lies 14 feet from the

[5] This may have been the bear effigy referred to in the D. L. Collie and R. H. Becker study, **op. cit.**, p. 51; however, their dimensions are misleading.

eastern edge of the river bank.

Mound "J", of the linear type, lies six feet south of mound "I". Mound "J" is 19 feet long and 10 feet wide and measures 16 inches from the summit to ground level. Mound "J" is partially obscured by scrub oak and lies 14 feet from the eastern edge of the river bank.

Mound "K", the last of the linear mounds, lies south of mound "B". Mound "K" is 29 feet long and 19 feet wide and measures 16 inches from the summit to ground level. Mound "K" is partially obscured by scrub oak and lies on the very edge of the river bank.

Mound "L", the first bird effigy, faces southwest and lies 69 feet from the edge of mound "K" (152°). Mound "L" is a well defined bird effigy and consists of the following dimensions. The crescent-shaped wings present an over-all length of 69 feet; the right wing measures 37 feet from the center of the mound to the wing tip. The diameter of the wing root measures 18 feet in width by 23 inches in height and diminishes proportionately to three feet in width and nine inches in height at the distal end.

The left wing measures 32 feet from the center of the mound to the wing tip. The wing root measures 18 feet in width by 39 inches in height and diminishes proportionately to four feet in width and 12 inches in height. The distal end of the left wing has been destroyed by cultivation; this has been compensated for by an extended line.

The body of the bird which protrudes slightly anteriorally, tapers past the center, then widens into a fan-shaped tail at the distal end. The body measures 45 feet in length by 24 feet in width. The fan-shaped tail measures 24 feet in width. The mound measures two feet, eight inches, from the summit to ground level. Mound "L" is situated within a growth of scrub oak and lies 50 feet from the eastern bank of the river. This mound appears to have been excavated.

Mound "M", the last of the conical mounds, lies 20 feet south of the distal end of the left wing of mound "L". This mound is slightly pear-shaped and is 35 feet long and 32 feet wide and measures 14 inches from the summit to ground level. Mound "M" extends into an open field and has been disturbed

by cultivation. Mound "M" lies 80 feet from the eastern bank of the river.

Mound "N", the second bird effigy, lies 90 feet (193°), from the center of mound "L". Mound "N" faces southwest, is similar in construction to mound "L", and consists of the following dimensions: The crescent-shaped wings present an over-all length of 70 feet. The right wing measures 37 feet from the center of the body to the wing tip. The diameter of the wing root measures 16 feet in width and 32 inches in height and diminishes proportionately to three feet in width and nine inches in height at the distal end.

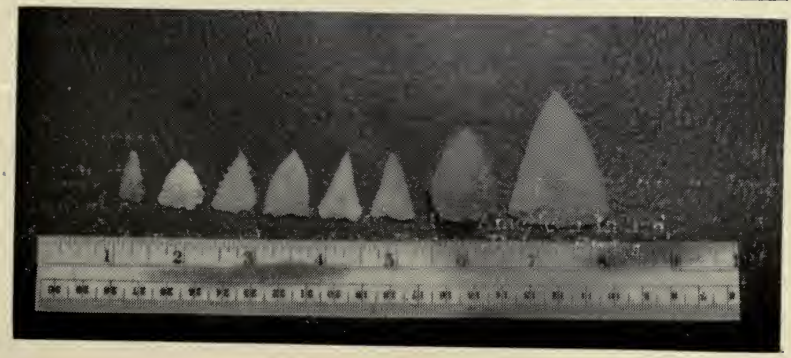
The left wing measures 33 feet from the center of the mound of the wing tip. The wing root measures 19 feet in width and 35 inches in height and diminishes proportionately to four feet in width and 10 inches in height. The distal end of the left wing has been destroyed by cultivation. This has been compensated for by an extended line shown in Figure 1.

The body of the bird has been disturbed; the anterior end has been gouged and there is a large depression in the center of the mound which is similar to the hole in mound "L". The body tapers slightly past the center, then flares out distally to form a fan-shaped tail. The body measures 43 feet in length by 27 feet in width. The fan-shaped tail measures 22 feet in width. The mound measures two feet, eight inches from the summit to ground level. Mound "N" is situated within a growth of scrub oak and lies 35 feet from the eastern bank of the river.

In excess of 250 artifacts (some shown in Figure 2) have been recovered from the Bigelow-Hamilton site as a result of surface surveys.[6] The artifacts are broken down as follows:

1. 12 stone projectile points.
2. 2 broken stone hammers.
3. 1 stone celt.
4. 240 pottery sherds.
5. numerous flint flakes.

[6] No excavation or analysis of findings has been conducted; however, excavation may be done at a later date.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Conclusion

The Bigelow-Hamilton paper is a redefinition of the G. L. Collie and R. H. Becker study of the "Bigelow Site", reported in the Wisconsin Archeologist in October, 1912. The land which contains the mounds has changed hands several times over the past 43 years. At some time in the past, cultivation may have destroyed or cut down the mounds. The land is now under the ownership of a Mr. Phil Hamilton. It is suggested by the Bigelow-Hamilton research team that this survey constitutes a new study in the light of recent findings.

The present land owner, Mr. Phil Hamilton, has been very cooperative and considerate of the research group field activities and maintains a protective interest in the matter of mound preservation.

A third study of mound sites in Portage County will concern an additional group of mounds which lie several hundred feet south of the present Bigelow-Hamilton site. This group may have been in part observed by Collie and Becker.

At present, both mounds face possible destruction due to the immediate location of the Town of Plover's dumping grounds. An appeal for the preservation of these mound sites has been presented to Mr. Clifford Swanson, chairman of the Stevens Point chapter of the Wisconsin State Historical society. Further archeological surveys in Portage county are being planned under the auspices of the Social Science department of the Wisconsin State College at Stevens Point.

A BRACHYCEPHALIC CRANIUM FROM BROOKFIELD, MILWAUKEE COUNTY

Arthur Niehoff

An Indian skeleton was recently uncovered by Mr. Des Jardin on his property at 18320 West North Avenue in the City of Brookfield, Waukesha County. The remains of this Indian were discovered while the Des Jardins were taking out a section of hill in expanding their yard.

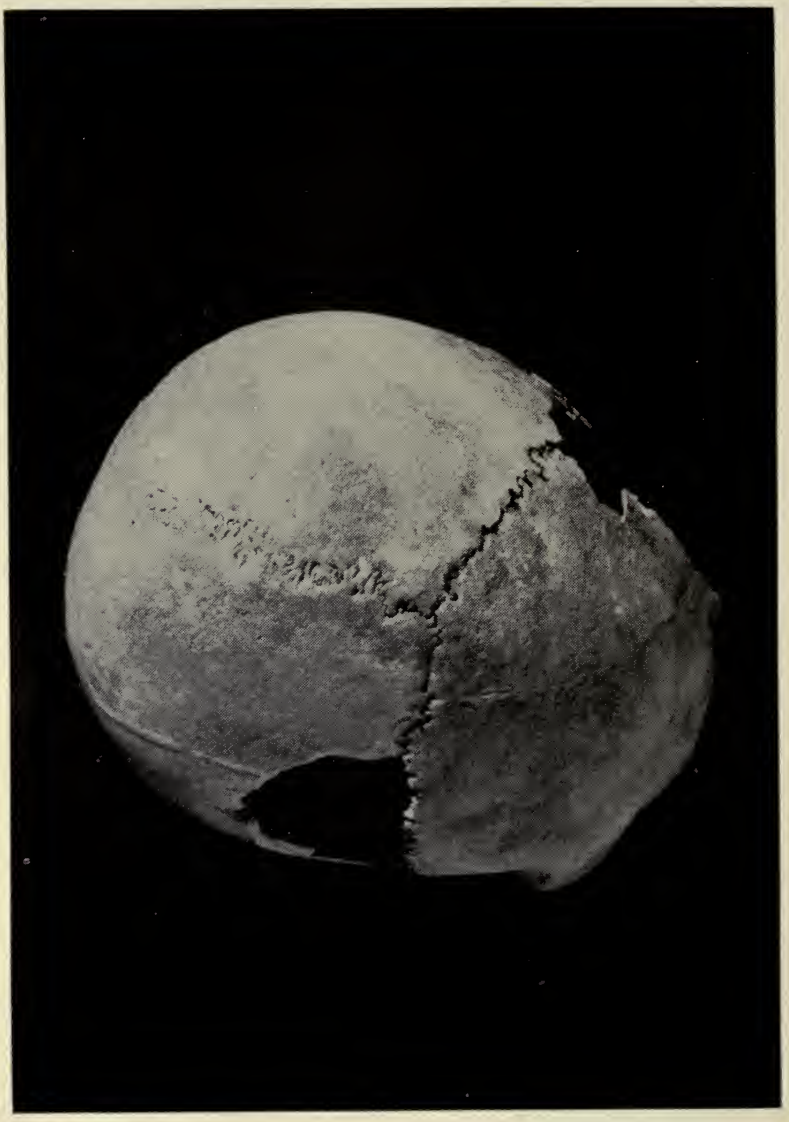
The chief interest in the find lies in the extreme broadheadedness of the cranium. It has a head length (glabello-occipital) of 175 cms. and a maximum breadth of 150. The cephalic index is 85.7. The crania height (basion to bregma) is 145, the length-height index being 82.8. The skull compares most closely to Neumann's Walcolid variety of which the average cephalic index is 77 and the average length-height index is 80 (1952 :32). However, this skull is considerably more round headed than is average for the group. There does not appear to be any artificial deformation.

The Walcolid variety of Neumann is identified archeologically with the Middle Mississippi peoples in the Ohio Valley (1948:23). In Wisconsin our one documented Middle Mississippi site is Aztalan near Lake Mills.

There seemed to be parts of the entire skeleton from the Brookfield find, and it was found at a depth of three to four feet in sandy loam. The bones were in very good condition though most of them were badly damaged because they were not recognized as human until the skull was dug out. The excellent preservation of the bones is also favorable to the Middle Mississippi affiliation of this individual, since this was one of the latest archeological horizons in the state.

How and why a man of the Middle Mississippi racial type was found near the shores of Lake Michigan can only be conjectured. Perhaps a hunting party was out, during which time one of the men died or was killed and he was buried on the spot. Or perhaps an Aztalanian had been captured by Woodland people, or had voluntarily joined a Woodland group.

NEUMANN, GEORG K.
1952 Archeology and Race in the American Indian, in Archeology of the Eastern United States. Ed. James Griffin, University of Chicago Press, Chicago.



THE OAK GROVE EFFIGY MOUNDS, DODGE COUNTY

Dr. E. G. Bruder

These ancient earthworks consist of two groups of effigy mounds on hills flanking the ancient trail which runs from Janesville and Watertown, northward through Oak Grove, following present State Highway 26 very closely. About one-half mile north of Oak Grove the trail swerves west to join the present town road north to its junction with present Highway 33, the ancient Sauk (Dekorah) trail, surveyed by the U. S. Army Engineers in 1829, as a military road. Several ancient works were formerly located here. From this intersection the trail continued northward on County Trunk A to Fox Lake where it met another very old trail, which became the military road between Fort Howard, Green Bay, Fort Winnebago, Portage, and Fort Crawford, Prairie du Chien.

Oak Grove is located in Oak Grove Township, which is almost the exact geographic center of Dodge County. It was surveyed in December, 1834, by George Harrison as part of the N. W. Territory. He was careful to indicate the ancient trails and works in his original field notes and map of the town. The owners of the Joseph Spaulding farm, bordering the trail in 1844, mentioned the constant passing of Indians and U. S. troops. These ancient trails, worn deep in the ground, through centuries of use, were often the only means of entry into and through this virgin wilderness of the Wisconsin Territory. They were widened and partially straightened by the Army Engineers, who noted the easy grade, with an avoidance of hills and low marshy places. A locality of good camping ground with nearby springs, often dates back to prehistoric times. Oak Grove suited both ancient and historic people.

Group A (Fig. 1) of the prehistoric works is located about one-half mile southwest of Oak Grove, T. 11 N. R. 15E. on the N. W. ¼ of the S. E. ¼ of Section 31, on the former August Poetke farm. The three goose effigy mounds bearing S. 70° W., are located on a small wooded hill, used presently as pasture. They follow a general characteristic in appearing near the very crest, and always on the side of the hill flanking the trail. These facts have helped us to relocate many of the old trails in Wisconsin. It was necessary for the present

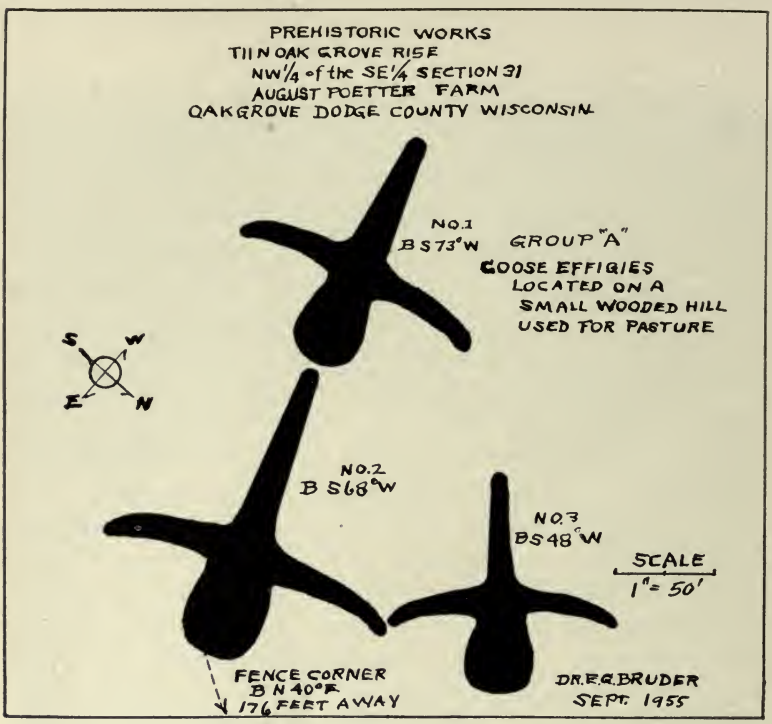


Figure 1

inhabitants to go back several generations for the exact location of the former springs of this area. Due to various causes, the springs of a former day have long since stopped flowing. They were a "must" to the builders of the prehistoric earthworks, and careful search will give evidence to their former existence, in close proximity to ancient camp, village, and earthwork sites.

Goose effigy No. 1 leads this group, and bears S. 73° W. It is 124 feet long with an overall wingspread of 123 feet. Its body is 30 inches high, the neck 20 inches, and the wings 24 inches. Considerable soil has been removed by heavy scrapers to make lawns and gardens. This resulted in a distortion of the body and neck. The original settlers soon realized that the ancients used only the rich top soil in construction of their mounds.

Goose effigy No. 2 bears S. 68° W., only three feet behind No. 1 effigy. It is 148 feet long, with an overall wingspread of the same length—148 feet. Its body height is 30 inches, the neck 22 inches and the wings 26 inches. This mound also has been subjected to soil removal, but in a procedure which left the outside periphery undisturbed. The soil here was too shallow for setting the scraper.

Goose effigy No. 3 bears S. 48° W., allowing for the characteristic "V" formation of geese in flight. Its left wing tip bears S. 30° E. and eight feet away to the right wing tip of No. 2 effigy. Its head and neck are slightly curved in the direction of effigy No. 1. The mound is 107 feet long, with an overall wingspread of 120 feet. Its body is 26 inches high, the neck 20 inches, and the wings 22 inches. It has never been mutilated.

Group B (Fig. 2) is in T. 11 N. Oak Grove R. 15 E., on the S. W. ¼ of the N. E. ¼ Section 32, on the Newton Cox farm. The mounds are located on a very high wooded ridge, about a mile southeast of Oak Grove. This ridge and group bears S. 10° W. m. g., and is partly covered with oak and hickory trees. It is used as a pasture, and has never been cultivated.

The outstanding feature of the group is the presence of three types of turtle effigies, each with different tail lengths. A fourth type, very rarely seen, is the forked tail turtle effigy mound, located on the University of Wisconsin Campus, on the hill to the north of Agricultural Hall. We often find two types, as in the several groups located at Lake Koshkonong, Jefferson County, in the Hoard and in the Atkinson groups, which are described in Vol. 7, No. 2, Old Series, April-June, 1908, of the Wisconsin Archeologist.

The Oak Grove group is headed by the curved short-tailed turtle, which is very rarely observed today. Starting with the northernmost mound, we have mound No. 1, a turtle effigy, bearing S. 8° W., with a straight, medium length tail. It is 86 feet long, with a tail 43.5 feet long. Its height is 3.5 feet. The width across the front legs is 38 feet, and the width across the rear legs is 33 feet. It has been disturbed by relic hunters years ago, who distorted the original body measurements.

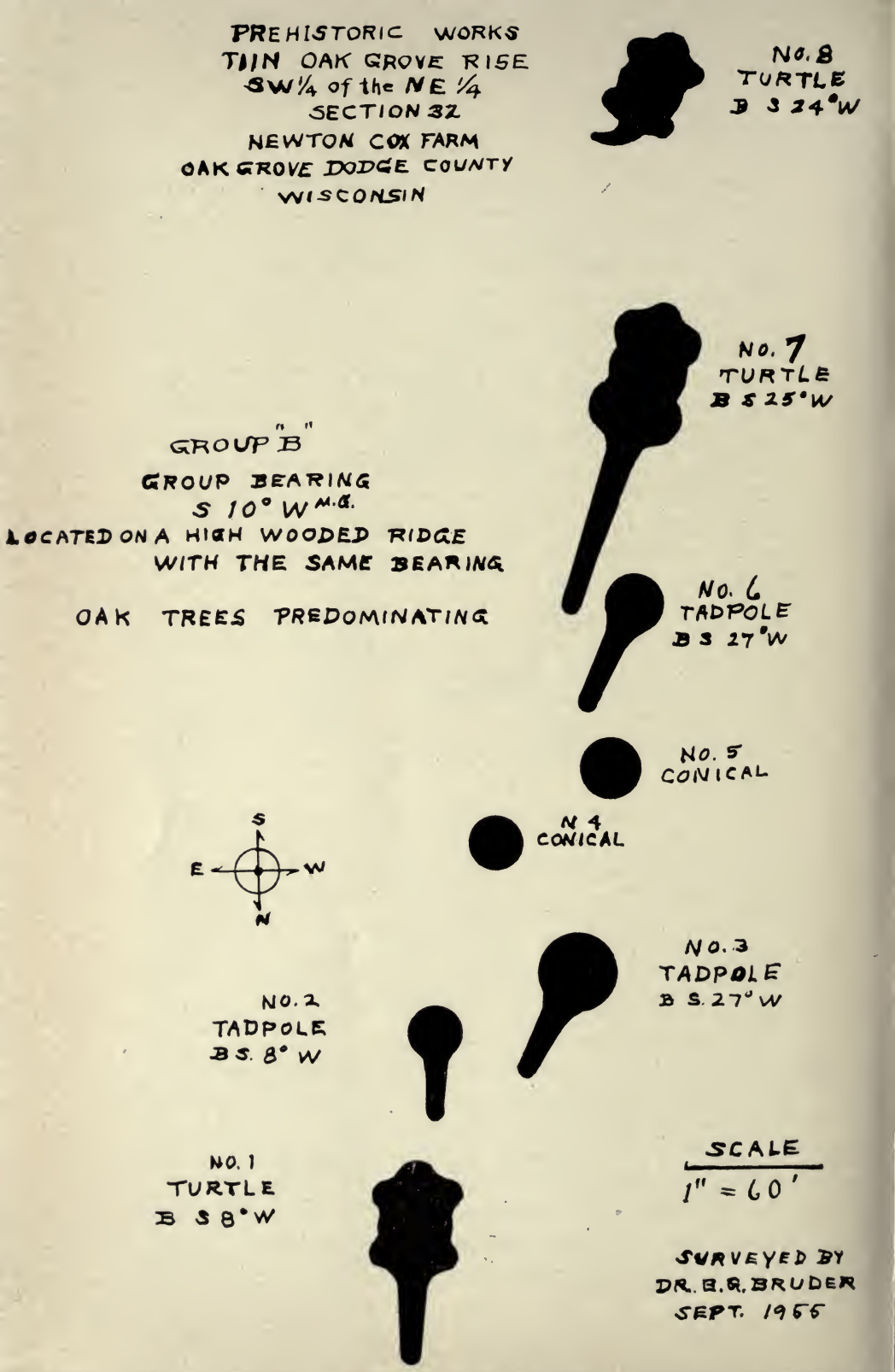

PREHISTORIC WORKS
TWIN OAK GROVE RISE
SW 1/4 of the NE 1/4
SECTION 32
NEWTON COX FARM
OAK GROVE DODGE COUNTY
WISCONSIN
NO. 8
TURTLE
B S 24° W
NO. 7
TURTLE
B S 25° W
GROUP "B"
GROUP BEARING
S 10° W M.C.
LOCATED ON A HIGH WOODED RIDGE
WITH THE SAME BEARING
OAK TREES PREDOMINATING
NO. 6
TADPOLE
B S 27° W
NO. 5
CONICAL
N 4
CONICAL
S
E
W
N
NO. 3
TADPOLE
B S. 27° W
NO. 2
TADPOLE
B S. 8° W
NO. 1
TURTLE
B S 8° W
SCALE
1" = 60'
SURVEYED BY
DR. E. R. BRUDER
SEPT. 1966

Figure 2

In common with the excavations into the other seven mounds of this group an opening was made in the center of the body or mound, with the removed soil partly obscuring the original periphery.

Mound No. 2 bearing S. 80° W., and 20 feet away, is a tadpole effigy. It is 46 feet long, 5.5 feet high, and its tail is 21 feet long.

Mound No. 3 is another tadpole, bearing almost due west and 41 feet away from No. 2 mound. This mound bears S. 27° W. with a length of 71 feet, a height of 3.5 feet, and a tail 30 feet long. It has the same characteristics as a tadpole effigy, a fairly high rounded body, with a gradual sloping tail.

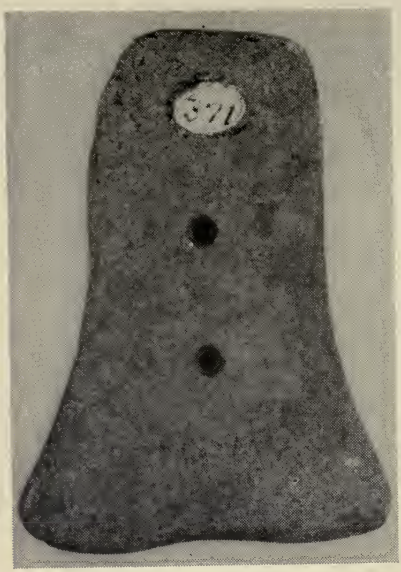
Mound No. 4 is a conical, bearing S. 18° W. and 58 feet away from Mound No. 2. It is 21 feet in diameter, with a height of 20 inches.

Mound No. 5 is another conical, bearing almost due west and 24 feet away from conical No. 4. It is 28 feet in diameter and 30 inches high.

Mound No. 6 is another tadpole, bearing S. 27° W. and 55 feet away from Mound No. 4 The tadpole is 65 feet long, with a tail 31 feet long and a body height of 30 inches.

Mound No. 7 is a long-tailed turtle effigy with a total length of 145 feet and a body height of four feet. Its tail measures 96.6 feet. The distance across its front legs is 33 feet, and the distance across its rear legs is 32 feet. Its bearing is S. 25° W. Considerable excavations in the center of the body resulted distention of the body sideways, almost in line with the extremities of all four legs.

Mound No. 8, the rarely encountered short, curved-tail turtle mound, is located bearing S. 13° E and 74 feet away from Mound No. 7. It closely resembels the same type turtle effigy in a pit located on the Amasa Clark farm, in Williamstown, Dodge County. The tails of both mounds make the same curve to the left. What the ancient people intended to portray with the different length tails of the turtle effigies, probably will never be known. Mound 8 bears S. 24° W., with a height of 38 inches, and a tail 17 feet long. The distance across the front legs measures 32.6 feet, and the distance across the rear



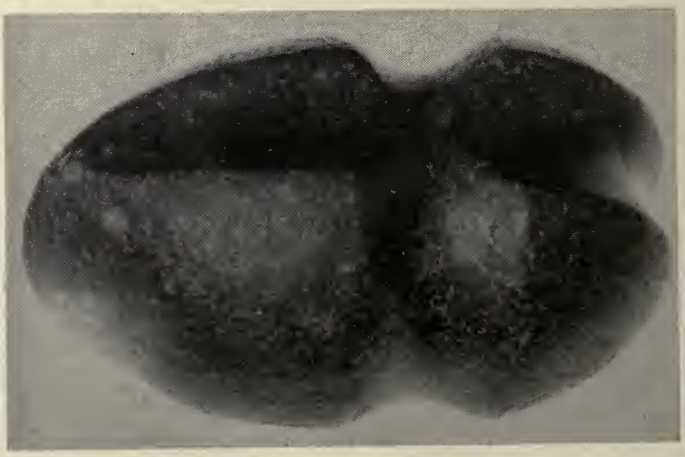
BELL-SHAPED GORGET

A surface find by Frank Britten. This unusual shaped specimen was found about three miles southwest of village of Leroy, Dodge County in Leroy Township, N. W. ¼ of Section 28.

Interesting Wisc

POLL-GROOVED STONE AX

The only known example of a fully grooved ax with a groove also running up the front, across the poll, and down the back, from one edge of the bit to the other. Length is 2⅞ inches. width 2 inches. Found by Earl Luebke at the Luebke farm near Iron Ridge, Dodge County.

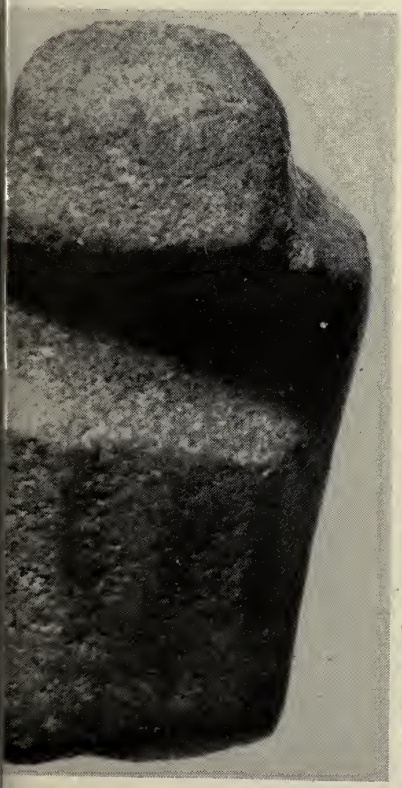


DODGE COUNTY FLUTED AX

Found by C. W. Pinkalla of Iron Ridge in August of 1955 on the northeast shore of Lake Sinissippi, Town of Hubbard. The specimen occurred about 250 feet from the shore, and, interestingly enough, at a depth of about 3 feet.

Of granitic rock, it is five and one-eighth inches in length, and three and one-quarter inches at its widest point. The poll was left unfinished, but the bit indicates use. There are six narrow flutes on one side and three wide ones on the other.

in Specimens



legs is 29.8 feet. The distance through the center of the body is 27.6 feet. It is a beautifully proportioned effigy.

The entire group is on the highest part of the ridge, on its westerly slope facing the ancient trail. The old trail evidently branched off at the extreme south border of the township, and followed northeast to its junction with present State Highway 26, near the Rupnow farmhouse. Comparison with the original survey of George Harrison showed that several later changes have been made, diverting the ancient trails to the present section line and corners. The ancients always followed the more direct course. Modern highway survey was definitely not one of their problems. Many descendents of the original settlers have pointed out the original trails, which the historic Indians used to a late day. The surveyed section, line roads, did not appeal to them. If the old trail led diagonally through a wheat field, that's where the tribe went, single file. Because of the bitter feeling that often resulted, the original settlers let the matter rest up to 1870 and 1880. It was a bitter pill for the redman to give up the ancient paths of his forefathers. It is a real thrill to encounter segments of these ancient trails located in remote, undisturbed area. They are usually over one foot in depth, continually meandering, and now heavily overgrown with second and third growth trees and shrubs. In cases, the trail-marker trees are still present, as, for example, near Horicon on the old Sauk (Dekorah) trail.

THE ROLE OF THE NON-PROFESSIONAL IN THE LOCAL SOCIETY

Clarence H. Webb

The history of the natural sciences is replete with instances of valuable contributions by non-professionals, from the discovery of new stars, the recognition and description of new species of flora and fauna, the collection and accurate recording of specimens, to the interpretation of the sciences to the general public through the media of the written word, talks to groups, radio and television. Many museums have been founded or enriched through the generosity of amateur en-

thusiasts. Unfortunately, on the other side of the coin there are too many instances of commercialism, hoaxes and fakes in many sciences. Archeology is a favorite field of the non-professionals, who are to be found in every city or town, running the full gamut of boyhood curio seeker, amateur collector, Boy Scout explorer group, private museum owner, serious non-professional student, pot hunter, commercial collector and trader, manufacturer and purveyor of false artifacts and the manipulator of skillful hoaxes. The professional and the honest non-professional, brought together in the local society, have the joint opportunity and responsibility of training the youth, restraining the over-zealous, curbing the commercialist and exposing the faker.

Everyone is agreed that the non-professional serves the science best who surveys his area; makes well recorded surface collections; watches for accidental exposure of artifacts and sites which turn up as a result of highway, railroad or other construction; helps to make local collections available for school instruction or the study of interested experts; and maintains contact with the nearest professionals. All of these valuable functions can be carried out more effectively through group action in a local society. Certainly the unwitting or careless destruction of mounds and sites, which is proceeding at a terrific pace since the advent of earth moving machinery, and the despoiling of sites by pot hunters or the wantonly curious can be prevented more effectively by group action than by individual effort.

The making of surveys and collections from sites which are threatened with destruction is an important function of amateurs in local groups. The best known examples are the flooding of areas by dam projects, but in our area the caving in of river valley sites by the migrant streams, sheet and gulley erosion of hillside sites and reverting of former farms to woodlands and pasturage are further examples of site destruction or removal from availability for surface collecting. In the South, the economic revolution of the past twenty years has resulted in the desertions of many marginal farmlands; in the more fertile areas there is a shift from cotton to cattle; many sites from which I made surface collections twenty

years ago are vanished or covered with underbrush. The famous Gahagan burial mound and much of the site have caved into Red River, as have several other mound sites in its valley. The Belcher site is a cotton field, levelled by power tools. The professional and intelligent non-professional would do well to study small local collections now, before they are broken up or the information about them dies with the collector, as many of the sites from which these collections came may no longer be available for study. In other parts of the country new sites will become available or old sites will disappear from other causes, as the face of the land changes, so that non-professionals in local societies can play important roles everywhere in collecting materials and recording information.

The serious non-professional can serve in other ways in organizations, which may be local, state-wide or regional. Sometimes the enthusiasm of non-professionals sparks the formation of a society, often they stabilize it through continuity and perseverence—for the professional is more likely to move as his career carries him to other parts of the country or world —and always the non-professional can help with financial support, as he may be in a better position to contact the public.

To the professional and non-professional I would say that there is work for all to do, individually and collectively, but we can do it much better if we are banded together on the local, state, regional, or national level. On behalf of the hundreds of amateurs in the country, my thanks to the enlightened professionals who have not scorned us, but have helped to make our avocation a search for truth as well as an enduring pleasure.

Editor's note: This is part of a paper read by Mr. Webb at the May, 1956 meeting of the Society for American Archaeology in Lincoln, Nebraska. I thought it an excellent statement of how the non-professional best serves the field of Archaeology. Mr. Webb is an active amateur from Shreveport, Louisiana.

SOME POINTS FROM LAKE MONONA

Frank Achen

In the February 1921 issue of the Archeologist there is the story and picture of "Angular Barbed Arrowponts" which were found in the Madison area.

This writer was engaged to move a house and build the foundation under it on the south shore of Lake Monona. On looking over the site, I discovered what appeared to be two linear mounds. They were approximately six feet wide and eight inches high above the regular level of the lot. They were parallel with each other and ran cornerwise with the lot. One was somewhat longer than the other.

I called Charles E. Brown and after carefully studying and measuring them he decided they were mounds. I believe he had them recorded.

The mounds were directly in the path of the new work and were completely destroyed by the excavating and grading. During the work I watched very carefully and was richly rewarded by finding the points shown in the accompanying picture (Fig. 1) as well as several other artifacts not quite as distinctive as the ones shown. The photo shows the exact size of the arrows and they are almost perfect duplicates of the ones in the former article.

THE PRAWATSCHKE MOUND GROUP, A WOODLAND BURIAL COMPLEX

Arthur Niehoff

During October-November 1955 the Milwaukee Public Museum sponsored an exploratory excavation of the Prawatschke Group in Dodge County (Niehoff 1956: 58). Further work was conducted in this group of 27 conical mounds in May - June 1956. The excavations was carried on under the auspices of the Milwaukee Public Museum with the active support and participation of the Milwaukee Chapter of the Wisconsin Archeological Society. Besides myself and Dr. Ritzenthaler from the Museum, there were eighteen members of the Archeological Society who spent one or more week ends at the site. The names of the participants in this work will be found in the Collector's Corner of this issue.

The mounds in this group are large for this part of Wisconsin. They vary from 1.5-14.78 feet in height and from 9-77 feet in diameter (Bruder 1951: 94-96). The one excavated in the autumn of 1955 and the three in the spring of 1956 were all large mounds, though smaller than the two largest, Nos. 14 and 16. Most of the mounds in this group had been dug into by relic hunters and the choice of undisturbed mounds was limited.

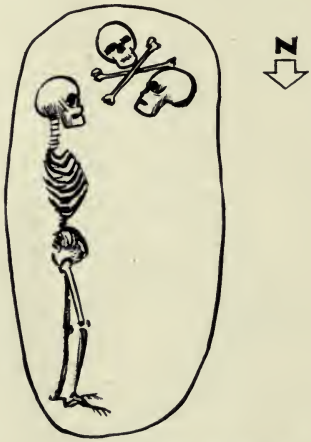
Mound 2

This mound is situated at the bottom of a hill and on a bank overlooking the Rock River. It is the southernmost of a group of three conicals, all of the same size. The diameter is given as

MOUND 2

40 feet and the height as four feet (Bruder 1951:94).

A five foot trench was cut into the center of the mound from the western edge. Considerable amounts of charcoal were found in the mound fill. Also in the mound fill at a depth of 1 foot 6 inches a crudely chipped stone drill of the winged type was encountered. At a depth of one foot in the mound fill some turkey bones were found in a bundle, and at a depth of 14 inches in the square next to the burial pit a sherd that is possibly cord-marked, with large grit for temper, was uncovered. Two broken chipped stone points were found in the fill, both at a depth of about one foot and both crudely flaked of white chert. In the center at the bottom of the mound a burial pit was located. A rectangular pit had been dug just below the original soil level for the deposition of the skeletons. It was oriented north-south and measured five by three feet. The pit contained three flexed burials. The only cultural material found in the pit were one cord marked Woodland potsherd and one small trianguler stone point. The point, however, was not found **in situ** and no direct association with the skeletons could be established.



MOUND 8

Mound 8

This mound is located toward the bottom of the hill inside the woods, also in a line of four mounds. The size as given by

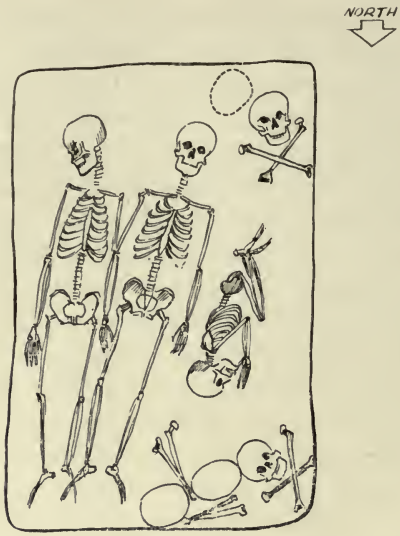
Bruder is 35 feet in diameter and 5 feet in height (1951: 94). At the center-bottom of this mound there was a sub-floor pit oriented north-south. The pit measured 6.7 in length and 3.3 feet in width. One extended burial was situated along the eastern edge, the head oriented south. A skull and bundle burial were located near the head of the extended skeleton and another skull in the southwest corner of the pit. The west half of the pit may have contained another extended skeleton. There were longitudinal stains in the part of the pit where the skeleton would have been located, and the skull which might have been a part of it was so badly decomposed that one third was removed before it was established to be a skull. Also, in the other three burial pits excavated, none had an empty area. In fact, all the other pits had obviously been dug just large enough to contain the burials. Mound 2, which was five feet by three feet and contained the articulated skeletons of three adults, could hardly have been more crammed.

The total cultural materials found in mound 8 were three Woodland potsherds, one under the burial and two just at the edge of the pit. The sherd under the burial is of heavy grit temper decorated with incised parallel lines around the vessel's circumference. Both of the other sherds are heavy and of grit temper but show no decoration.

Mound 11

This mound is situated at the top of the hill overlooking the Rock River. It is in the middle of the woods and in Bruder's survey measured 42 feet in diameter and 5.5 feet in height (1951: 96).

In excavating it, before reaching the burial pit we encountered a straight line of field stones 8.5 feet in length, running north-south at a depth of two feet below the surface, which was about half the distance from the top of the mound to the burial pit. The burial pit was found to the east of the stone line-up. We found no stones over the burial or on any of the other sides. The pit was again oriented north-south and just below the original soil level. It measured 8.5 feet by 5 feet. The pit contained two extended burials on the east side, oriented to the north, one flexed skeleton on the west and two skulls with bundles at the south end. There was also



MOUND 11

possibly another skull between the two bundle skulls. All the bones in this pit were in such a bad state of decomposition it was not possible to be sure of this skull. We were unable to take out any of the bones from this pit. There were no cultural materials found in this mound.

At the bottom of the hill in the sand just below Mound 1, we excavated a bell-shaped refuse pit. It contained heavy concentrations of charcoal, two broken stone points, a rolled copper bead, and a Woodland sherd (Fig. 1). For decoration the sherd was cord-marked, with punctate designs over the cord marking. This pit cannot be definitely associated with the mounds even though it is probably of the same culture. It was right at the base of Mound 1 and all of the material found in it could be classified as Woodland.

There were also about 30 sherds picked up along the sand bank in which the refuse pit was found. These had washed out of a cultural layer approximately one to two feet deep that extends a considerable way along this bank. All the sherds were Woodland, either cord-marked or undecorated.

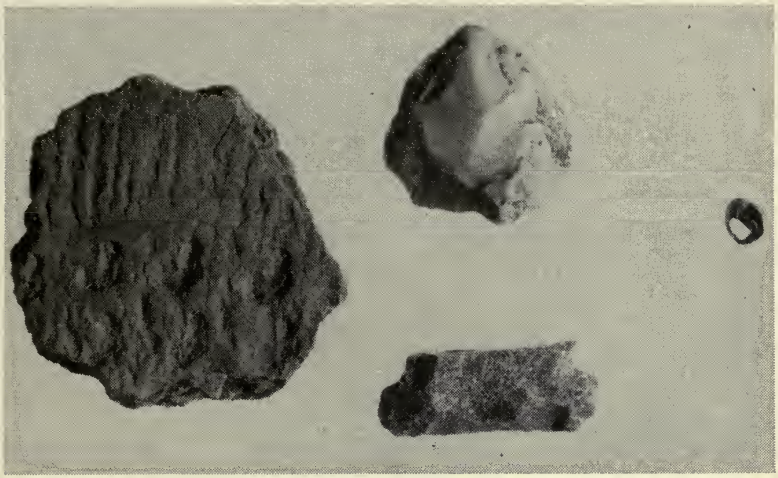


Figure 1

Conclusions

The Prawatschke Mound Group, on the basis of the four mounds excavated, cannot be given a positive cultural identification, other than that it is linked with Woodland culture. A variety of burial methods were found including extended, flexed, bundle, and partial cremation. This variation in burial practices has been mostly associated with early archeological horizons in the state. The pre-pottery Reigh site contained all the types of burial found at Prawatschke (Baerreis, Daifuku and Lunsted 1954: 29). Also the Old Copper Site at Oconto contained the complete range of variation in burial types (Wittry and Ritzenthaler 1956: 249). Neither of these sites, however, contained burials in mounds, in contrast to the Prawatschke burial pattern. Also in contrast to the burials at Prawatschke, the Oconto and Reigh site burials contained a considerable amount of cultural material in association. Comparatively, all that can be said is that a variety of burial techniques is perhaps an early trait.

Another site has been reported that had almost the same assemblage of cultural traits as at Prawatschke. This is the Polander Mound Group in Crawford County (personal communication from W. C. McKern). Burials here were in large

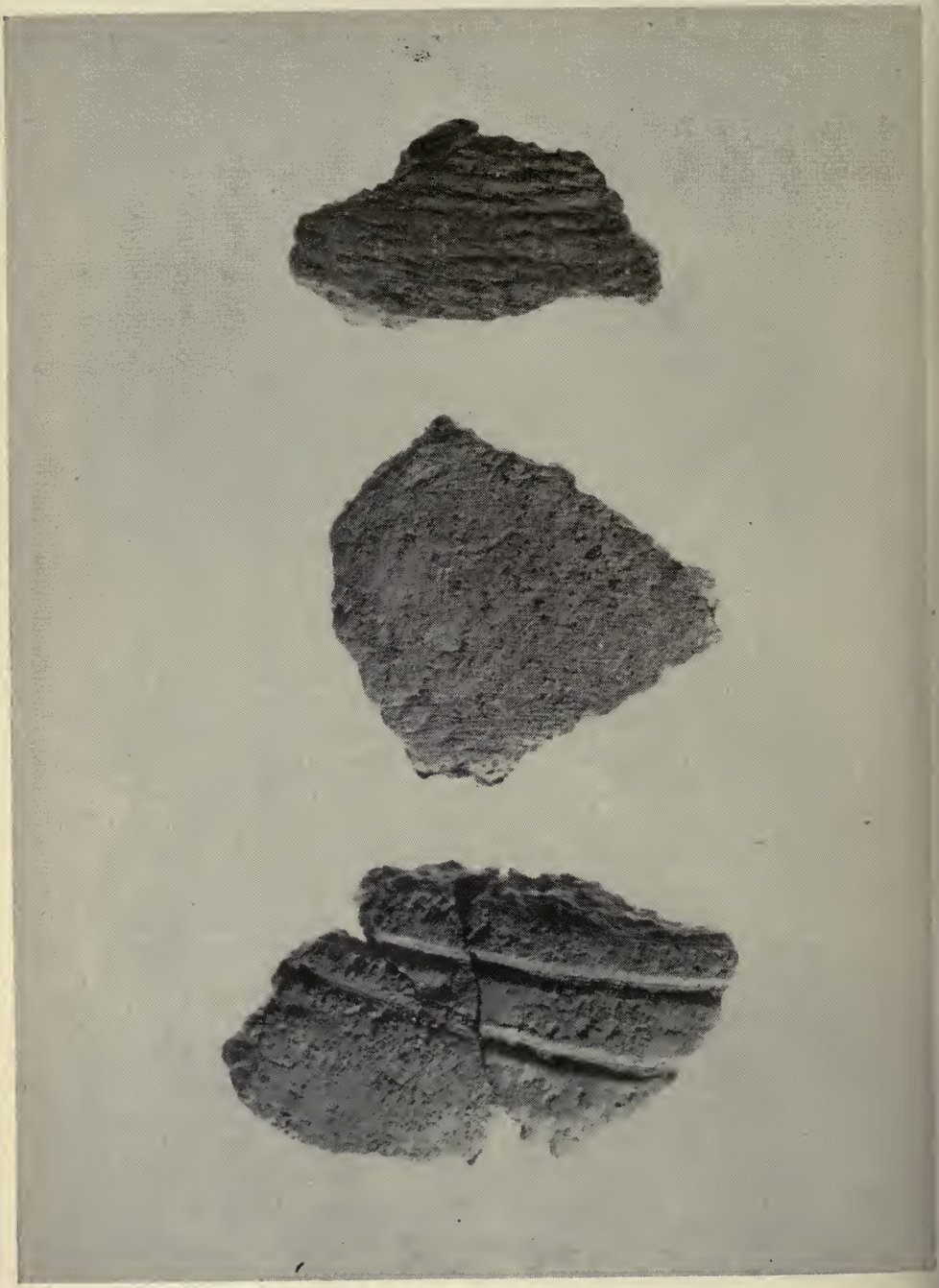


Figure 2

mounds and of the same variety as at Prawatschke—flexed, extended, bundle, and cremated. Each burial group had a stone plat above it. In comparison, of the four Prawatschke Mounds excavated, two had stone structures associated. There was the same sparsity of cultural material as at Prawatschke, a total of seven mounds producing one grit-tempered, undecorated potsherd and one bracelet of rolled copper beads. As a further connection it is to be remembered that a rolled copper bead was recovered from the refuse pit at Prawatschke.

As previously mentioned, the artifacts obtained at Prawatschke were few but they were sufficient to identify the culture as Woodland. The potsherds (Fig. 2) were all grit tempered and either undecorated or with cord marking and/or incising. Since no whole vessels were found, direct association cannot be implied. All that can be said is that the pottery was in existence when the mounds were built, so that at the very least we know the mound group is post-Woodland. One large sherd was found beneath a burial and others were found right at the edge of the pits. It is probable that the makers of this pottery were the mound builders themselves.

There is such a small amount of chipped stone work that no useful generalization can be arrived at other than that all of it falls into the Woodland pattern (Fig. 3). The Prawatschke site remains then as a type of Woodland burial pattern, perhaps an early one, varying somewhat from the better known Effigy Mound Pattern.

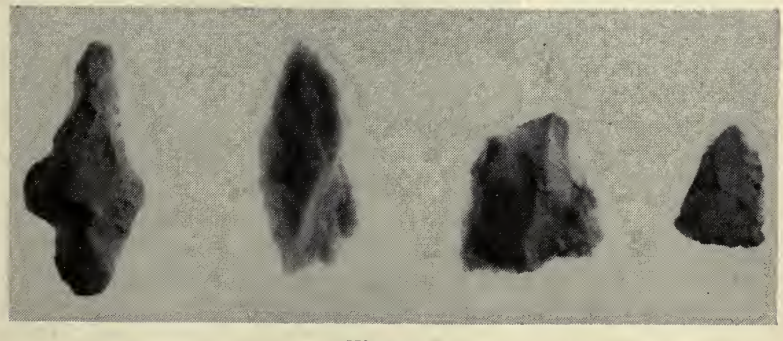


Figure 3

REFERENCES CITED

Baerreis, David A., Daifuku, Hiroshi, and Lunsted, James E.
1954 The Burial Complex of the Reigh Site, Winnebago County, Wis. Wisconsin Archeologist, Vol. 35, No. 1.

Bruder, Dr. E. G.
1951 The Prawatschke Indian Mounds of Dodge County. Wisconsin Archeologist, Vol. 32, No. 4.

Niehoff, Arthur
1956 Excavations at the Prawatschke Mound Group in Dodge County. Wisconsin Archeologist, Vol. 37, No. 2.

Wittry, Warren L. and Ritzenthaler, Robert E.
1956 The Old Copper Complex. American Antiquity, Vol. 21, No. 3.

THE SOCIETY welcomes two more anthropologists to Wisconsin. Dr. James Silverberg (social anthropologist), and Dr. Robert Howard (archeologist) began their teaching duties in September at the University of Wisconsin—Milwaukee.

TWO NEW BULLETINS of the Milwaukee Public Museum are now available. "The Effigy Mound Culture of Wisconsin" by Chandler W. Rowe, and "The Mexican Kickapoo Indians" by Robert E. Ritzenthaler and Frederick A. Peterson.

Member ROBERT HRUSKA of Marinette assisted in the excavation of the White Rapids Mound Group conducted by a University of Michigan field party under the direction of Dr. Albert Spaulding. This is a group of large conical mounds along the Menominee River, near Marinette. DR. CHANDLER ROWE, MR. GEORGE QUIMBY, and DR. ROBERT RITZENTHALER ran a 6 day test dig at the nearby Oxbow site, also along the Menominee River.

THE MILWAUKEE PUBLIC MUSEUM with participation from the Milwaukee Chapter of the Archeological Society excavated three more conical mounds and a refuse pit at the Prawatschke site in Dodge County this spring. This

was the first opportunity for most men to participate in a scientific "dig." Interest ran high, many of our members returning to the excavation week after week. We take this opportunity to thank the following 20 members for their help on this project:

Edgar Bruder, Carlos Cortez, Donald Espensen, Martin Greenwald, Walter Henning, James Kaczmarek, Frank Kaminski, Franklin Luebke, Arthur Niehoff, Juanita Niehoff, William Oestreich, Mrs. William Oestreich, Neil Ostberg, Steve Persha, Allen Prill, Robert Ritzenthaler, Holly Schindle, Alfred Smith, Lincoln Smith, Kirk Whaley.

DURING THE SOCIETY'S SPRING DIG in Dodge County we met many of the local collectors, and obtained eight new members. TODDY LUEBKE of Iron Ridge appointed himself as the star recruiter and six of these are due to his efforts. Nor has Tody stopped—his next target is Hustisford. If membership in this area continues we will have to set up a Mayville chapter.

THE FOLLOWING NEW MEMBERS ARE WARMLY WELCOMED INTO THE SOCIETY:

Charles Bierhals, Route 3, Fond du Lac, Wis..
Franklin B. Farvour, P. O. Box 38, Ripon, Wis.
Robert Freckmann, 2334 N. 33rd Street, Milwaukee, Wis.
Jerry Gruber, Route 2, Mayville, Wis.
Evan A. Hart, 1902 N. 49th, Milwaukee, Wis.
Dr. Ruth Herrick, 26 Sheldon Ave., S. E., Grand Rapids, Michigan.
Robert E. Janecek, 738 S. 108th Street, Milwaukee, Wis.
Frank Klein, 8330 Stickney Ave., Wauwatosa 13, Wis.
Earl Luebke, Route 1, Iron Ridge, Wis.
Franklin Luebke, Route 1, Iron Ridge, Wis.
Ralph Matson, Mayville, Wis.
Charles Merbs, 654 Appleton St., Menasha, Wis.
Jack A. Meyer, AF 16435810, 6604 OPNS SQN. Box 128, APO 862, N. Y., N. Y.
Jerome Okon, Route 2, Mayville, Wis.
Steve Persha, Route 2, Mayville, Wis.

Portage County Historical Society, c/o Mr. Clifford Swanson, 401 Green Ave., Stevens Point, Wis.
George Quimby, Chicago Museum of Natural History, Chicago, Illinois. (Life)
Mike Radke, R. F. D. 1, Ripon, Wis.
Holly Schindle, 4329 S. Griffin, Milwaukee ,Wis.
William Sell, 832 S. 10th Ave., Wausau, Wis.
Tom Travers, Route 2, Mayville, Wis.
Bob Vogel, Sunset Acres, Libertyville, Ill.

THE SOCIETY will be watching with interest the outcome of the November referendum to vote funds for a new and larger Milwaukee Public Museum. We would all like to see more exhibit space available for archeological specimens. We hope all members in the Milwaukee area will do their bit in obtaining "YES" votes on this issue.

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WISCONSIN ARCHEOLOGICAL SOCIETY

Milwaukee, Wisconsin
Incorporated, 1903

For the purpose of advancing the study and preservation of Wisconsin Indian Antiquities.

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REIGH SITE REPORT – NUMBER 3

Robert Ritzenthaler with reports by

Neil Ostberg, Kirk Whaley, Martin Greenwald, Penny Foust, Ernest Schug, Warren Wittry, Heinz Meyer, Edward Lundsted

Perhaps the most exciting and significant discovery in a decade of Wisconsin archeology has been the Reigh Site on Lake Butte des Morts, Winnebago County. This large burial ground is the first in situ manifestation in our state of the little known Glacial Kame culture, a culture which portends to provide us with a chronological and perhaps cultural bridge between Old Copper and Early Woodland.

While there are no Carbon 14 dates for Glacial Kame, Dr. Griffin (personal communication) and others believe that this culture was flourishing during Late Archaic times, perhaps 4000 years ago, to at least partially fill the time gap between the Early Archaic Old Copper peoples of 5-7000 years ago, and the Woodland folk who presumably arrived around the time of Christ. While there is little doubt as to the chronological position of Glacial Kame, its cultural affiliations are much more tenuous. The cultural connection of Glacial Kame with Woodland, for example, is vague and unconvincing. Some similarity in burial techniques, and comparable artifacts such as copper wedges and anculosa beads are among the few traits that the two groups have in common. The case, however, for Glacial Kame being closely related or even a continuation of Old Copper is quite strong. If the Glacial Kame peoples were not actually physical and cultural descendents of the Old Copper folk, they were certainly followers of the basic cultural traditions. A list of the trait similarities between the two groups would include such negative factors as absence of pottery, agriculture, and mounds; identical burial practices,

and a strong copper tradition emphasizing utilitarian implements over ornaments. While some of the copper objects are identical, such as the crescentic knives, rolled beads, and conical points, there are really more differences in artifact types than similarities. The idea of the socket tang, for example, is retained by the Glacial Kame people, but the blade-forms shift from a median ridge to the beveled edge. The Reigh Site has also produced culturally unique artifacts such as the elk antler ax handles and a copper head ornament, previously unknown to the archeological world. The diagnostic trait of Glacial Kame as reported for other areas (Cunningham) [1] has been the so-called "sandal-sole gorget," a shell breast ornament of distinctive shape and usually three perforations. One of this type was found in the original excavation at the Reigh Site. Other materials of interest from the site include: the "ace of spades" shaped copper points, copper wedges, socketed copper knives with beveled edges, notched swan bones, conical antler points, and anculosa shell beads. The importance of the Reigh Site, however, is the fact that here is an assemblage of materials that indicate a particular culture not previously known for Wisconsin. It was discovered in July of 1953, excavated as a project of the Wisconsin Archeological Survey, and reported upon in the March, 1954 issue of the Wisconsin Archeologist. [2] Since the first excavation there have been explorations by private individuals to augment the original data. One such report entitled "Additional Material from the Reigh Site" by Neil J. Ostberg appeared in the March, 1956 issue of the Archeologist. The purpose of the present report is to assemble and record all available shreds of information not included in the first two reports.

One problem of the editor in publishing such reports is that of keeping the terminology consistent. This is difficult to do, especially when plates are involved and already lettered, but more often because the use of a particular implement is actually not known. Thus we have not altered author's terms

---

[1] Cunningham, W. M. A Study of the Glacial Kame Culture. Occ. Contr. Museum of Anthrop., U. of Michigan, No. 12, 1948.

[2] Baerreis, Daifuku, Lundsted. The Burial Complex of the Reigh Site, Winnebago County, Wis.

"celt," "wedge," "chisel," because actual usage is debatable, but it is necessary to point out to the reader that these terms refer to a single type of copper artifact. The two socketed copper pieces in Ostberg's Burial 10, however, have been changed from "points" to "knives," because the asymmetrical blades and single sharpened edge is rather conclusive evidence of their use as knives. We have also taken the liberty to refer to the elk antler pieces as "ax handles" rather than "axes" as in the original report, based on our opinion that some sort of a stone or metal blade was attached to these. As an experiment a copper spud from the Osceola Site was slipped onto one of these handles, and a neater, snugger fit could hardly be imagined (Fig. 1). It should be emhpasized that no copper spuds were found with the three handles recovered from the Reigh Site, and that the use of spuds with such handles is as yet an opinion rather than fact. A copper spud found at the site in 1899 (see Wittry's report) lends additional credence to this theory, however. Finally, to clarify one item in the original report, the two conical points described as "antler" in the text and "bone" in the inventory and cut-lines are actually antler.

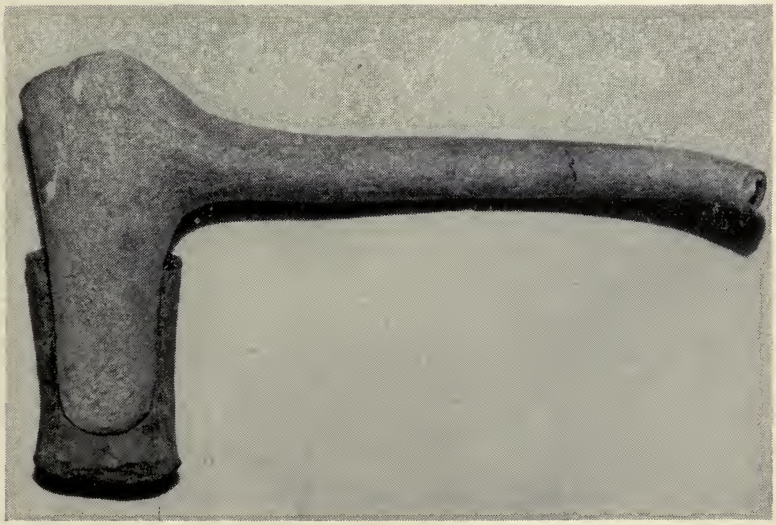
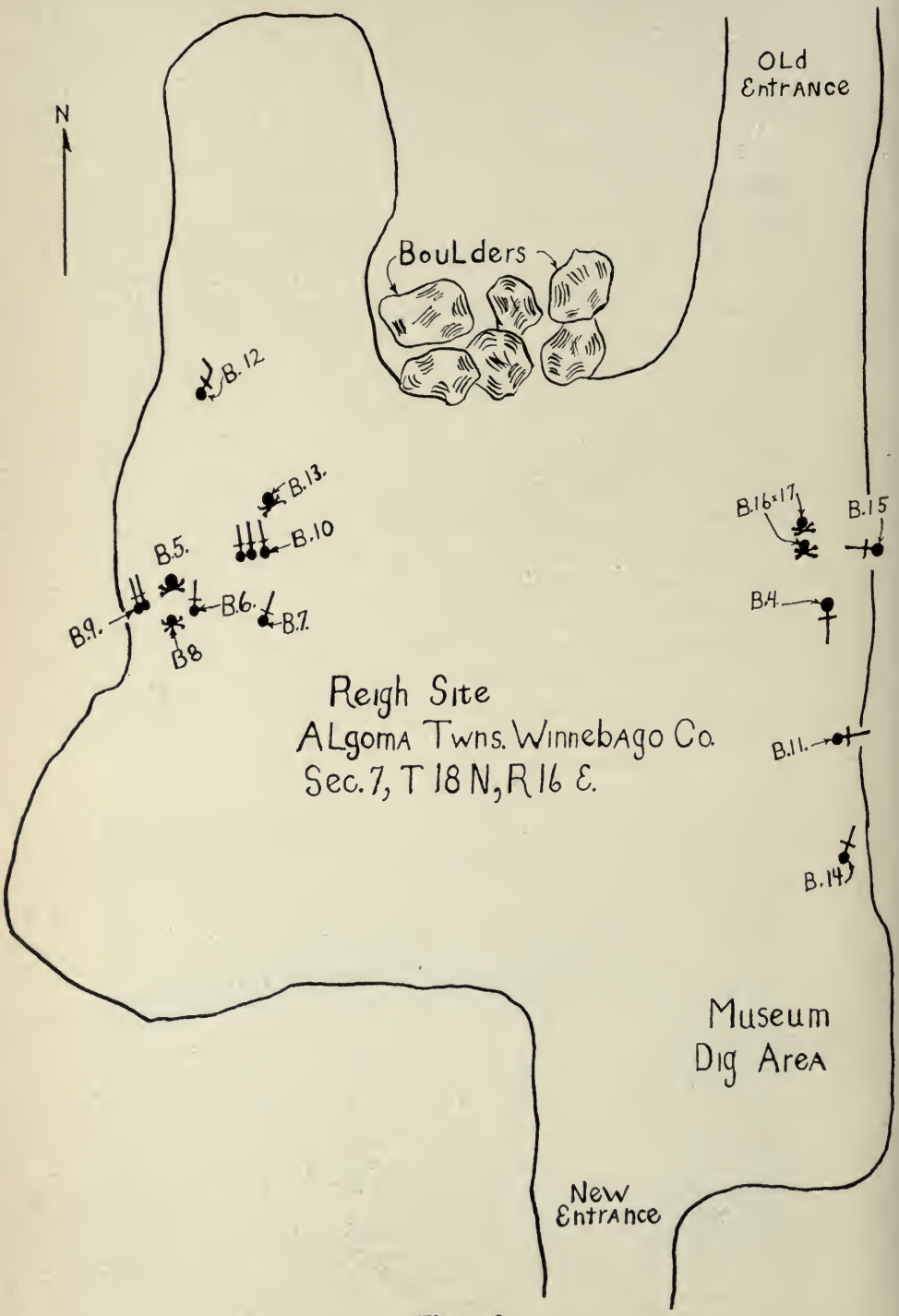


Figure 1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Reigh Site
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Museum
Dig Area
New
Entrance

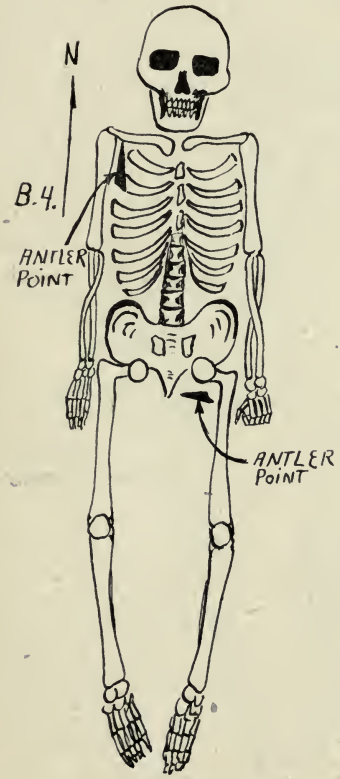
Figure 2

We wish to thank the authors for their reports and loan of materials for photographing and reproducing herein.

REPORT BY NEIL J. OSTBERG

The following is an inventory of burials found after those described in the author's previous report.

Burial No. 4. East side of pit (Fig. 2), adult male, buried in flesh fully extended. Left hand clenched (Fig. 3) as if holding the shaft to which the antler point was hafted. The second antler point was found at the right arm pit. Small unidentified fragment of copper under skull. Dept. 3' 4", directly above water deposited gravel layer. Date of find, April 15th, 1956.



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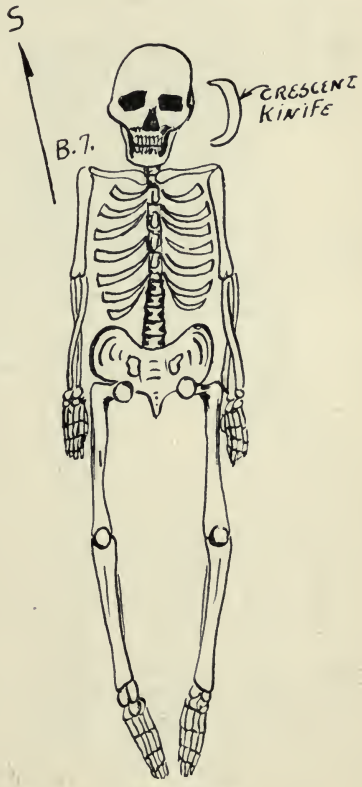

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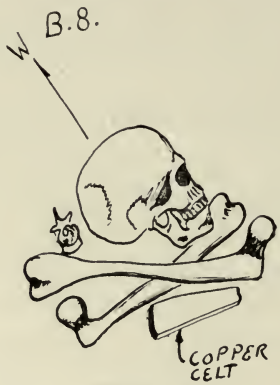

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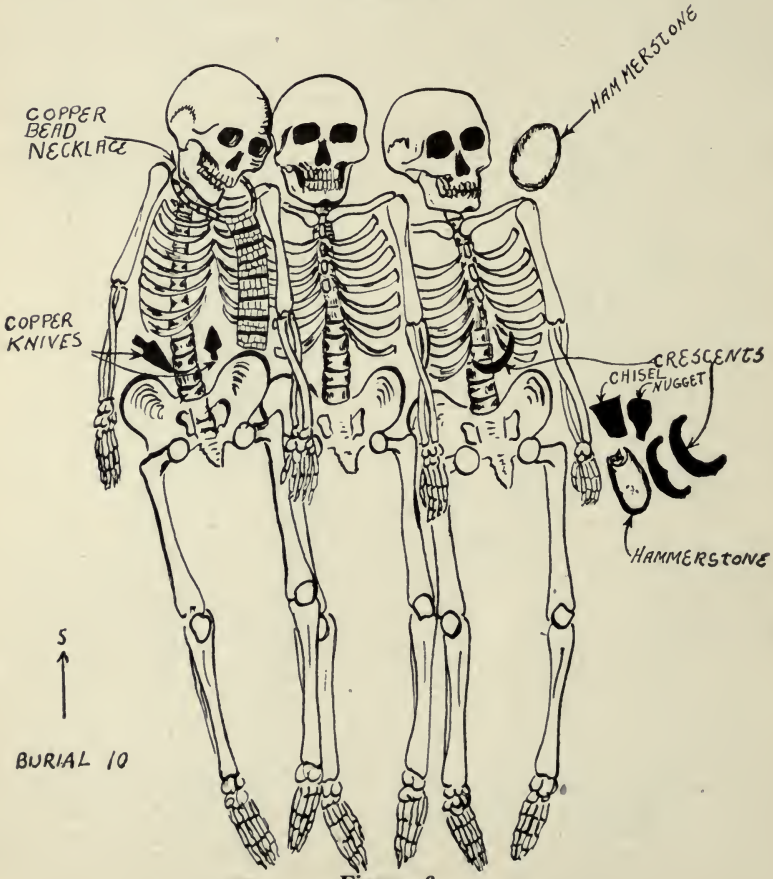


Figure 6

Burial No. 5. West side, young male, bundle, no grave goods. Depth 5' in gravel. Date of find, June 1, 1956.

Burial No. 6. West side, female, old, buried in flesh. Depth 3½'. Human cremation at the abdomen. June 2, 1956 in gravel.

Burial No. 7. (Fig. 4) West side, adult, male. Buried in flesh fully extended. Depth 4'. Copper crescent placed at the west side of skull. Found in gravel. Heavy concentration of red ochre about burial. June 2, 1956.

Burial No. 8. (Fig. 5) West side, sex ?, bundle, adult old. Depth 4'. Copper celt alongside upper bone of left leg. Only productive bundle found this time by me. June 9, 1956.

Burial No. 9. West side, adults, 2, males. Possibly twins because of similarities in skull and bone structure. Heavy red

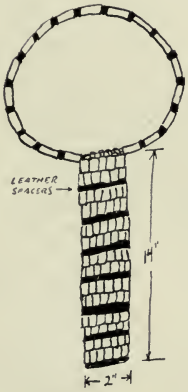


Figure 7

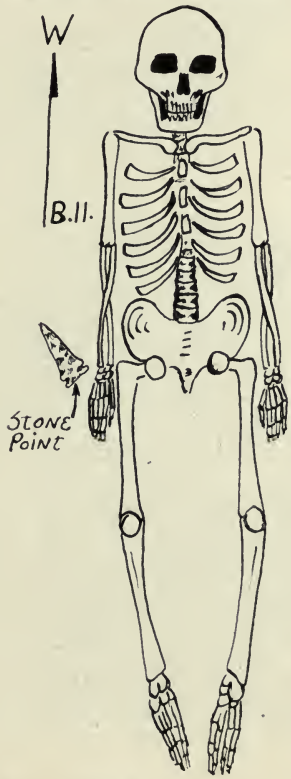


Figure 8

ochre about burial. Fully extended. Depth 4½'. June 23, 1956.

Burial No. 10 (Fig. 6). West side, 3 adults, male. All buried in flesh and fully extended. Depth 5'. Below gravel layer in coarse sand and gravel mix. Extremely heavy concentration of red ochre about all parts of the three individuals. Anculosa-shell beads scattered about burial with a concentration of beads about the center individual's left hand. Two hammer-stones, 3 crescents (1 with incised decoration), 1 chisel. 1 nugget (possibly worked), 2 copper knives *, beaded necklace. For locations check drawing. Blade of chisel fits in designs on crescent. Necklace sketch is included (Fig. 7). August 25, 1956.

* Wood fragments from one of the knife sockets were identified as birch by Forest Products Laboratory, Madison.

Figure 9. Copper Wedges. Ostberg Collection

Figure 10 Copper knives. Three crescent type (lower one with incised line decoration), and two socket-tang type. Ostberg collection.

Figure 12. Beads. Rolled sheet copper, and anculosa shell (Leptoxis praerosal). Ostberg Collection.

Burial No. 11 (Fig. 8). East side, adult. Buried in flesh fully extended. Depth 1½'. Bone in last stages of decomposition. Sex undeterminable. Impossible to save bone. One stone spear found at the right hand. September 9, 1956.

Burial No. 12. West side, adult, buried in bent position, buried in flesh. Large fire pit adjacent to burial. Depth 6½'. September 9, 1956.

Burial No. 13. West side, bundle partially disturbed. Depth 2½'. Child or young adult. No grave goods. September 9, 1956.

Burial No. 14. East side, buried in flesh fully extended. Adult, female, middle aged. Depth 4'. No grave goods. September 15, 1956.

Burial No. 15. East side, adult. Buried in flesh fully extended. Depth 1'. Bones in last stages of decomposition. Two fragmentary copper awls on pelvis. September 15, 1956.

Burial No. 15 and 17. East side, bundles, depth 3½'. Adults, old, no grave goods. September 16, 1956.

Figure 11. Two conical antler points, one chipped-stone point. Ostberg Collection.

REPORT BY ERNEST W. SCHUG

My first visit to the Reigh Site in Winnebago County took place on April 26, 1955. It was shortly after walking into the gravel pit that I discovered several bones protruding from the east face of the excavations. Upon closer observation I found that some of these bones were human and others appeared to be those of a large animal. I began digging down throug the sand from the original top surface to the level of the bones which were about 2½ feet below the surface. Now I was looking at the exposed bones from above and was able to get a better view of what I had found.

This turned out to be a burial pit for three individuals. Two of these were male flexed burials and one was a bundle reburial. Among one of the flexed burials were the larger pieces of animal bone which I first saw protruding from the side of the pit. These after reconstruction turned out to be parts of an elk antler axe handle (Fig. 13). To my knowledge there have been only two other such speciments found in Wisconsin and they also were found here at the Reigh Site, in Winnebago County. These two are at present on display at the State Historical Museum at Madison.

Figure 13. Elk Antler Handle. Schug Collection.

My specimen measures in overall length 12½ inches by 7 inches at the head. Both ends of the head were sharpened and presumed to have been used as cutting edges. The tip end of the handle, which originally was the antler point, had been cut off probably to prevent the sharp tip end from injuring its owner as he carried it.

The second burial contained a 4 inch long chipped stone knife (Fig. 14) which was lying directly beneath the base of the skull. This was all that I found included in the three burials.

Later, on a short visit to the Reigh Site on July 4th, 1955,

Figure 14. Copper knife, copper pendant, marine-shell bead, Chipped-stone knife. Schug Collection.

I picked up a 4½ inch copper knife with the aid of my then newly purchased metal detector. It was lying in disturbed sand about 8 inches below the surface. This took me less than 20 minutes of looking to find, and proved enough for so hot a day.

My latest find was on October 23, 1956 when I found, in a section previously dug over, a copper pendant measuring 1¼ inches in length with a single hole punched or drilled through the narrower top end, and one polished disc shell bead.

Since then I have spent several Wednesdays probing and digging with Dr. Bruder at the Reigh Site for any overlooked burials and artifacts, but thus far have uncovered no addi-

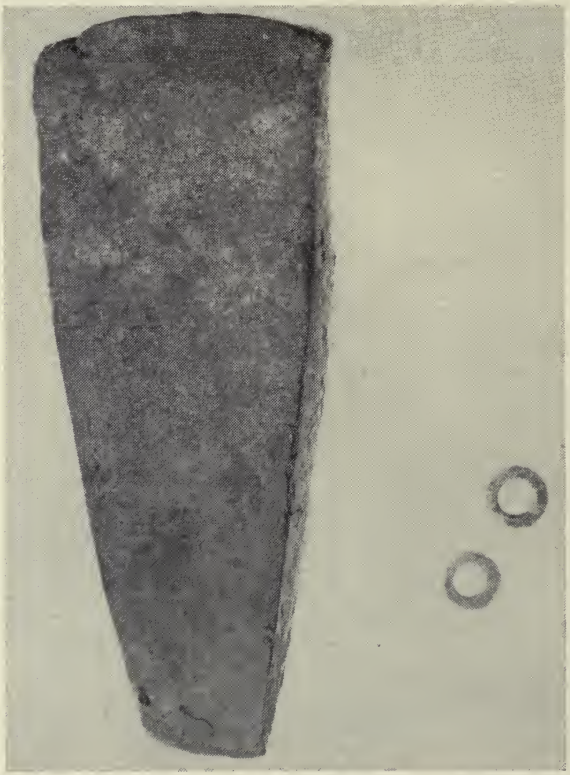


Figure 15. Copper wedge and two marine-shell beads. Whaley-Greenwald Collection

tional material. Of course once you have the "Indian Relic Hunting Bug" as I aave had for the past 20 years, you keep going back time and again always hoping that under the next shovel full of earth will be some rare sought after specimen of the early Indian culture.

Report by Kirk Whaley and Martin Greenwald

The following specimens (Fig. 15) were obtained during September, 1956:

One copper wedge was found at a depth of about 2 feet in a disturbed area northwest of original excavations by the University of Wisconsin. It is 4⅞ inches in length, 2⅛ inches across the top (which shows evidence of hammering) and tapering to a fairly sharp bit ⅞ inches in width. It is square in cross-section, its greatest thickness being ⅜ inches. It was found in an upright position, apparently associated with a burial, the nearest bones of which were about one foot away.

Above this same burial (and 1 to 1½ feet below surface) we found two shell beads. They are 7/16th inches in diameter and cylindrical in shape.

Also included in this area was a dog skeleton. The animal was about the size of a coyote according to Walter Pelzer, Milwaukee Museum taxidermist, who did the identification. This specimen was donated to the museum.

Report by Phil Wiegand

The three specimens (Fig. 16-17) here described were all found in disturbed soil among the boulders at the north end of the Reigh Site, during September 1956.

The copper projectile point is 1-13/16 inches in length, and 11/16 inches greatest width. Sixty copper beads (restrung as a necklace in the photo) average about ⅜ inches in length, and occurred within an area of about a foot. They are made of sheet copper folded into a flattened cylindrical shape. A section of deer jaw shows 15 incised lines running vertically along the exterior (buccal) surface. Positioning of the specimens in terms of the skeletal material could not be determined, although skeletal material was scattered throughout the area.

Figure 16. Copper Beads and Point. Wiegand Collection.

Figure 17

Report by Penny Foust

My six copper specimens (Fig. 18) were all found in one small area, apparently in a single burial pit, at the west side of the Reigh site, in the general vicinity of Ostberg's Burial 7 (see map). Three spear points ("Christmas Tree" shape). have the socket tang and beveled blade. The longest one is 4 inches and lightly patinated. The other two, 3½ and 3¼ inches in length, show heavy acid corrosion. The wedge is 3¼ inches in length with hammered top tapering to a 1⅝ inch wide bit. The stemmed spearpoint is 3¼ inches in length. The cresentic knife is 5⅜ inches at greatest width.

Report by Warren L. Wittry
1899 Discovery at the Reigh Site

The museum of the State Historical Society contains three copper implements (Fig. 19) found with a gravel pit burial on the Okrou farm on the south side of Lake Butte des Morts in the Town of Algoma, Winnebago County. They were unearthed in 1899 and presented in that year to the Society by D. W. Osborn of Oshkosh.

There is no doubt that the location is the same at the Reigh site and that the 1899 find belongs to the same archeological complex revealed in the 1953 fieldwork. (The name of this farm is variously spelled in the contemporary Winnebago County Plat books and atlases as: Okreug, O'Krueg, O. Kreg, and Okrou).

The wedge (type VI-G of the writer's classification) and the crescent (type III-C) duplicate recent discoveries reported elsewhere in this issue. The spud (type V-C) is a new trait to be added to the trait list for this complex. Since the implements were found with a burial, they do not represent a cache. They were tabulated, however, along with other caches (Wittry, p. 15) in an attempt to show how such finds from various localities were related to each other through the recurrence of the same types in association.

WITTRY, WARREN L.
1951 A Preliminary Study of the Old Copper Complex. **The Wisconsin Archeologist,** n. s., Vol. 32, No. 1, pp. 1-18.

Figure 18. Copper Artifacts. Foust Collection.

Report by Heinz E. Meyer & Edward Lundsted

Introduction

On May 23, 1955, Terry Radig phoned James E. Lundsted. Curator of Anthropology Oshkosh Public Museum, indicating that he had discovered some bones and pottery protruding

Figure 19
Copper spud, wedge, and crescent found in 1899 at the Reigh Site. State Historical Society specimen Nos. A1587, A1566, A1582; Neg. No. WHi(X2)7945.

from the west wall of a gravel pit on the property of Matt Reigh, located on the south shore of Lake Butte des Morts in Algoma Township, Winnebago County.

Mr. Lundsted and Mr. Stuart Mong, Director of the Oshkosh Museum, went out to the Reigh Site on May 25 and made a superficial examination of the area. Lundsted noted that the area contained the remains of at least two refuse or possibly burial pits. He unearthed some pottery and bones but most of the pits had been destroyed by a power shovel in the process of removing fill from the area.

Mr. Mong's interest became focused in an area on the opposite wall of the pit from which Lunsted was probing and in which appeared, in profile, a peculiar reddish strata of fine sand about two and one-half feet below the surface. Further probing of this area revealed bone that had a marked greenish tint which Lunsted recognized as being caused by the presence of copper salts. These gentlemen decided to discontinue any further probing until they could consult with Heinz E. Meyer, who had been notified of the find and was on his way to the site.

It was almost 5:00 P. M. by the time Mr. Meyer arrived at the scene. Despite the late hour it was decided that excavation should start immediately because of a fear that if it were put off till the following day the material might be lost to the children and souvenir hunters who had come to watch the activity in the gravel pit.

The Reigh farm has been the intermittent source of sand and gravel fill for a period of approximately 40 years. It was not until recently, however, that large quantities of fill were removed from the farm. Extensive excavation by ground moving equipment led to the discovery of the burial complex in 1953. Further earth removal in 1955 led to the discovery of the burials to be described in the following article.

Description of Site

Due to the removal of fill, the floor of the gravel pit is rapidly taking the shape of a giant horseshoe. Extending into the center of the pit is a finger of high ground that has not been used recently as a source of sand or gravel. It is evident that soil removal operations had been carried on in this area from

time to time with the removal of about a foot to a foot and one-half of-top soil. The excavation created by this operation appears then to have been used as a dump for refuse and very large boulders. These boulders may have been removed from the farm land or pushed into this hole by machines as gravel removal proceeded. It is in the west wall of the finger that the burials were found (near the "B" in boulders on Ostberg's map).

In profile the burial area was stratified into several types of soil. Immediately under some very large boulders lay a disturbed, humus-laden layer of earth interspersed with gravel about one to one and one-half feet deep, suggesting previous earth removal operations. Under this layer appeared an apparently undisturbed strata of fairly course gravel ranging from 8 to 12 inches in depth. Then came a layer of sand, 6 to 8 inches deep. This sand strata contained the burials. Just below the burials was a hard-pan layer of earth about one-half inch thick. Below this was sterile sand.

Method of Excavation

Two problems presented themselves in the excavation of these burials; the first was the lateness of the hour, the second dealt with the problem of removing the huge boulders that apparently lay over parts of the burial. Because of the general fear that any delay might mean the loss of some valuable information and possible artifacts, it was decided that the burial might best be uncovered in two stages. The first stage consisted of earth removal up to the first boulder.

The earth was removed from the top down to the level at which the burials were exposed in profile. The purpose of this was to see if there was any evidence of a pit when viewed from the top. Interestingly enough, no such evidence of a pit appeared in either the humus layer or the gravel layer. Even in the sand layer, there was no clear cut evidence of a pit. Not until the trowels scraped down to the sand, which was stained a reddish brown, was there any clear indication of a break in the continuity of the various levels of earth. A close scrutiny of burial area in profile also revealed no clear impression of a pit.

As excavation of the red tinted sand proceeded, it became

evident that this peculiar color was created by the presence of red ochre. Careful examination of this sand revealed specks of charcoal and great amounts of pigmentation. The pigment was of such quantity that it thoroughly stained the bones found in the burial a reddish-brown.

These facts suggest that this interment was probably accomplished by a great deal of ceremony, since it must have required some extended effort to grind this large amount of pigment and spread it over the entire burial. The charcoal also suggests that some sort of ceremonial burning took place over the open grave. The burning was not of such sufficient heat as to cause any of the bones to be charred.

Continued removal of the stained sand soon revealed the

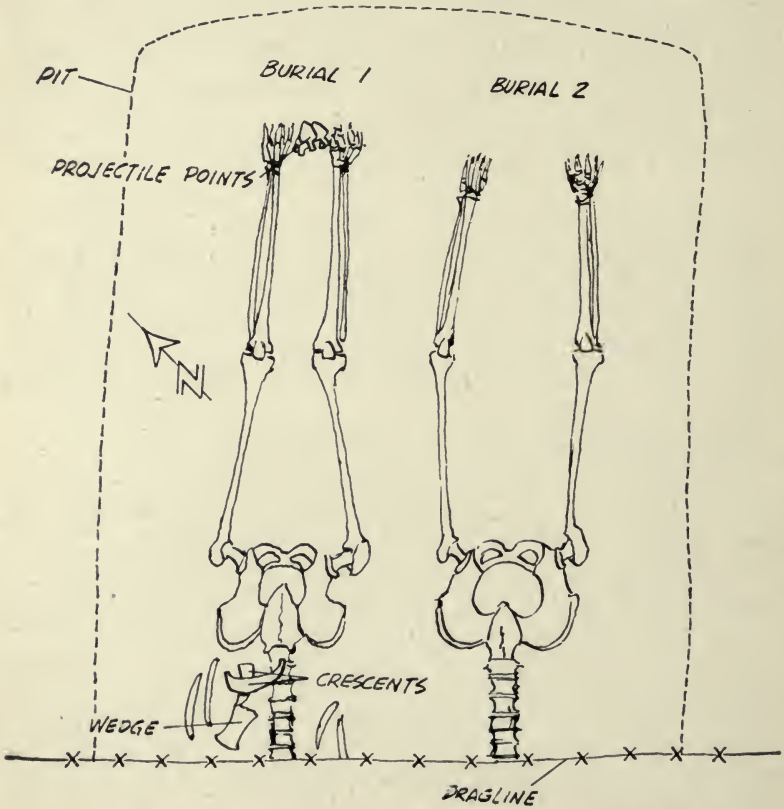


Figure 20. Diagramatic sketch of double burial at Reigh site.

first of three copper implements. This implement was lying on the lower lumbar vertebrae of a human vertebral column. The corrosion of the copper implement had stained the bone and part of the ground a brilliant green.

Finally the entire burial area up to and partly under the first large boulder was exposed. It was now evident that the grave contained two individuals placed side by side on their backs with the arms resting along side their bodies (Fig. 20). The burials were oriented in an almost due east and west position with the heads of the skeletons to the west.

The skull and shoulder region, as well as the upper parts of the arms, were missing from the northernmost skeleton Most of the upper region. from the head to the pelvis, was missing from the other skelton. These bones undoubtedly were removed by earth-moving equipment in the process of getting sand or gravel.

The bones generally were in a very bad state of preservation, except in those regions in which copper salts from the corroding copper implements had impregnated the bone of the vertebral column of burial 1.

Three copper implements (Fig. 21-22), consisted of two crescent shaped blades and one celt, were found in association with burial 1 in this first phase of excavation. It was obvious that these implements had been placed upon the abdominal region of the buried person, since the pronged crescent blade lay across the second, third and fourth lumbar vertebrae. The second crescent lay under both the pronged crescent and the celt. The celt lay immediately to the left of the vertebral column, extending diagonally from the first lumbar to perhaps the tenth thoracic vertebra. Since earth pressure caused the pronged crescent to be bent around the third lumbar vertebra, the blade was weakened sufficiently to cause it to crack and break when it was picked up.

Also found in association with this skeleton was a bracelet of shell beads fastened by a copper clip (Fig. 23). This bracelet was found around the right wrist, to the right and underneath the ala of the ilium. The right ilium of the pelvis had been forced down by earth pressure over the right wrist.

It was difficult to accurately ascertain whether there was

Figure 21. Crescent blades found in association with burial 1. Note punctate design on upper blade.

Figure 22. Copper celts or wedges found in association with burial 3 and 1. Left celt appears to have evidence of woven material on it. Right celt was found in association with burial 1 in the region of the vertebrae.

one or more bracelets since two different types of shell beads were found *. Snail beads and clam shells were mixed together suggesting that it was only one bracelet. This opinion is further strengthened by the fact that only one clasp was found. However, it could be that several strands of beads had intertwined and that later earth pressure forced them together making it appear as only one. This is not at all impossible since the snail and clam beads appeared to be strung in no set pattern.

The south skeleton or burial 2 was in a still worse stage of preservation. The power shovel had cut through the area on an angle in a N. W.-S. E. direction and thus removed greater

* Note: The Ostberg collection of shell beads includes campeloma, Marginella, and Anculosa. (R. R.)

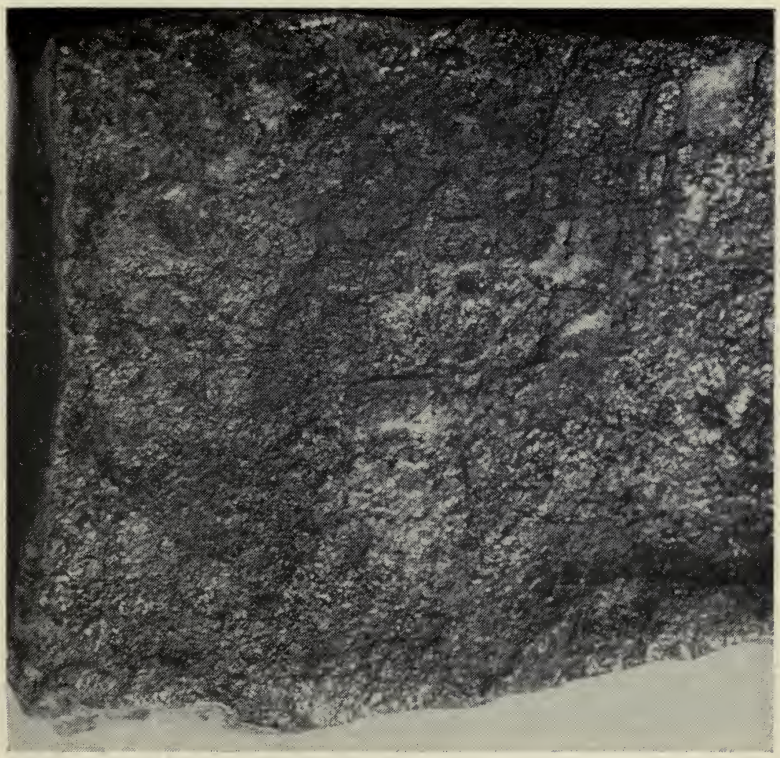


Figure 22a. Detail shot of netting on copper wedge.

portions of the upper part of the body than was the case in burial 1. Also, the bones of burial 2 were of much lighter construction. This fact, no doubt, contributed to the couse of their more rapid disintegration. The pelvic region had almost completely disintegrated. Portions of the lower arms were visible as well as scattered pieces of bone which appeared to be the lower ribs. No artifacts were found in burial 2.

The second phase of excavation had to be postponed until the following Saturday. It was necessary to remove two large boulders in order to get at the remaining parts of the burials. With this accomplished the method of excavation was similar to that of the first phase described above. Earth removal proceeded by easy stages through the various layers of soil until the tell-tale, reddish-tinted sand was reached. The faint outlines of a pit were visible in the gravel layer, which was something that was not ascertainable in the first phase of excavation.

With the full uncovering of the lower extremities of these

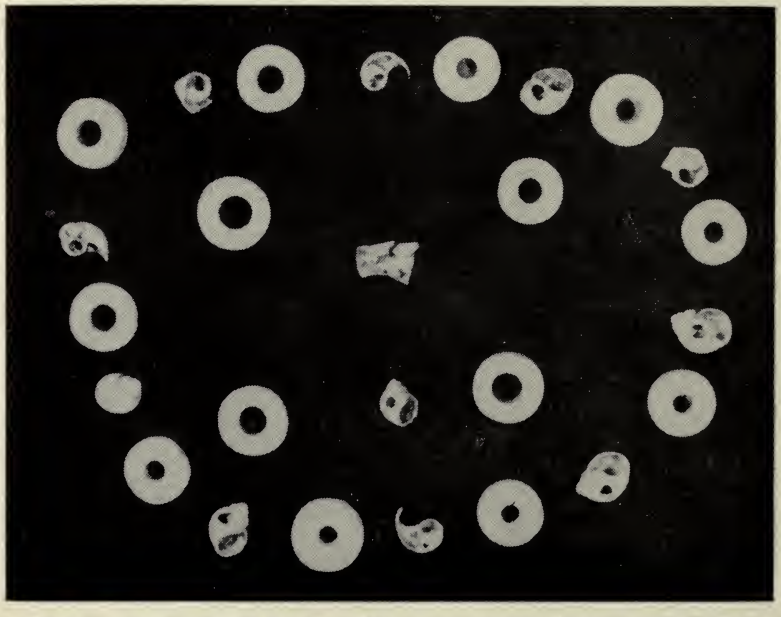


Figure 23. Shell beads and copper clip (center) found around right wrist of burial 1.

two skeletons, it was evident that this was truly an extended burial. These lower portions of the skeletons were in a much better state of preservation than the upper portions had been. Red ochre covered all of these portions of the burials and bits of charcoal were found on and around the bones, suggesting ceremonial burning over the open grave. No evidence of charred bone was found.

With the complete exposure of the bones, it was obvious that burial 1 was the more heavily built of the two skeletons. The long bones were very heavy in contrast to burial 2. This suggests the possibility that burial 1 is male and burial 2 female. The region of the knees in burial 1 was rather large. Noticeable, also, was a decided anterior-posterior bend of the remaining portions of the femora.

The feet of both skeletons pointed skyward. Between the feet of burial 1 lay the second series of copper implements to be associated with this find. Five copper points (Fig. 24) lay between the calcanea, pointing towards the soles of the feet. It was evident that the shafts or arrows with the copper points had been placed between the legs of the buried individual.

The long bones of skeleton 2 were of light construction and

Figure 24. "Ace of Spades" shaped projectile points found in association with burial 1. Left to right points 1, 2, 3, 4, 5.

quite straight. Similar to the findings of the first phase of excavation, this burial had no artifacts associated with it. Also, this skeleton extended about 6 inches further to the east than skeleton 1. This was due to to the placing of the skeleton rather than to any greater height. The head of skeleton 2 probably was placed in a position adjacent to the shoulders of skeleton 1. This, however, can only be inferred since as recorded previously, the upper portions of both skeletons had been destroyed by a power shovel.

The actual size of the pit in which these two individuals were buried could not be determined. However one dimension, the width was measurable. This proved to be 8 feet across at the level of the burials. Undoubtedly, in profile, it was wider at the top of the pit because a slight outward slant of the edges was noticeable in excavation. No measurements were made at higher levels, however. The only measurement is that of the actual burial level; thus, the degree of slant to the pit in profile cannot be accurately stated.

The pit extended 1 foot 2 inches beyond the feet (east) of skeleton 2. If the assumption is made that the individuals were 5' 6" to 6' and the edge of the pit above the heads of the skeletons was another foot, the general shape of the pit at the burial level would be very close to a square 8 by 8 feet.

After this second phase of the excavation was completed, the pertinent facts were recorded and photographed. The burials were then picked up for later study.

Attention was then focused on an area 30 feet to the southeast on the edge of the finger of high ground that extended into the gravel pit. One of the children had discovered pieces of bones and excavation soon showed that this was not an actual interment but rather the bones of some burials that had been dragged or dropped and then covered over by either a drag line or power shovel. None of the bones were articulated in any manner to suggest either a flexed, extended or bundle burial. Only parts of one or two or possibly three skeletons were found. These bones consisted primarily of the upper portions of the skeleton, i. e. ribs, clavicles, humerus, etc. At first this suggested that these bones might be the upper portions of burials 1 and 2 which were dropped into

this position by earth moving equipment. The thing that strengthened this contention was that one of the clavicles was stained green, indicating the presence of copper salts. However, further excavation revealed a femur about 1 foot away from the shoulder and thoracic parts which had been excavated. Whether this femur belongs to the other bones is questionable. It appears to be lighter in color and further study is necessary to make any final disposition of the matter.

Even though this skeleton material is not an actual interment in the true sense, further reference to it in this article will be spoken of as burial 3.

Coisiderable earth was removed from this general area because the material was discovered to be lying in no set pattern either horizontally or vertically. The bones varied in depth from 6 inches to 24 inches with their longitudinal axis at all angles considered in the above two planes. However, though more earth was removed, the bones were all found scattered through an area 2 feet wide and 4½ feet long, running parallel to the western edge of the finger of high ground excavated by the power shovel. This burial area, like the finger of ground, ran in a N. W.-S. E. direction.

It was in this area that the second copper celt was found. This celt (Fig. 22) was located about a foot from any bone material in the N. W. portion of the area described above. It was surrounded by sand, and even though it was badly corroded, the copper salts had not stained the soil in any appreciable manner. The stained clavicle lay about three feet to the S. E. with the odd femur lying about one-half way between the two. The position of these items, plus the fact that the ground generally was disturbed, strongly suggests that these items are an accidental reburial caused by the earth-moving equipment.

Description of Artifacts

It is noteworthy that all artifacts with the exception of one celt were found in association with burial 1 in the large double grave. A description of these artifacts follows beginning with the five projectile points found between the heels of burial 1.

Projectile Points (Fig. 24)

Three dimensions will be given in chart form; they are the **Length** which is measured from the tip to the base of the projectile, the **Width** which is measured through the widest points on the head of the projectile, and the **Thickness** which is derived by measuring a point half-way on the axis extending between the widest points on the head of the projectile. All measurements will be given in millimeters.

	Length	Width	Thickness
Point 1	63 mm	30 mm	4 mm
2	60 mm	30 mm	3 mm
3	56 mm	30 mm	2½ mm
4	48 mm	30 mm	2 mm
5	51 mm	25 mm	2 mm

These points generally are well made and display a marked degree of good workmanship. The outstanding feature, however, is that portions of the wood from the hefted shaft has been preserved by the corrosive action of the copper. The height of the shaft on the projectile point is clearly visible and can be measured. This measurement follows. It is determined by measuring from the base of the projectile to the impression of the crown of the shaft left on the point. By subtracting this figure from the total length it can be determined how far the point extended into the shaft.

	Height of Shaft	Height point extends above shaft.
Point 1	32 mm	31 mm
2	34 mm	26 mm
3	25 mm	21 mm
4	24 mm	24 mm
5	27 mm	24 mm

Points 1, 3 and 4 show marked basal thinning. This thinning appears to have been produced by hammering. Also, there is thinning on the edge of the points in the area in which the greatest width occurs. It appears as if the shoulders of the point were produced by hammering and thinning out of this region.

Point 2 exhibits a marked flaw just above the base. It appears as if the process of annealing a copper flake failed to properly mesh with the rest of the projectile or possibly some

impurity in the copper later worked its way out of the point creating the flaw.

Tanged Crescent Blade (Fig. 21, lower)

The overall maximum length of this artifact is 154 mm. The maximum width of the blade proper is 24 mm. and the maximum thickness measures 3½ mm. This blade is badly corroded, though one end is in a much better state of preservation. There is a good sized nick, 18 mm. long, on the cutting edge of the left end of the blade as it is pictured. The tangs, which measure approximately 20 mm. for the right one and about 15 mm. for the left, are undoubtedly the means by which the knife was hafted to a handle of wood or bone. The left end of the blade is broken because of being bent around a vertebra.

Crescent Blade (Fig. 21, upper)

This blade differs from the one above in that it has no tangs. Its overall maximum length is 139 mm., its maximum width 28 mm., while the maximum thickness is 4 mm. Another significant feature is the punctuated design on one side of this blade. These marks are square or rectangular in shape and spaced about 4 to 5 mm. apart along the non-cutting edge. This design on this blade suggests the possibility that this is not a utilitarian blade but rather an ornament to be worn, even though the blade appears to have a cutting edge. This edge is not as sharp and thin as that of the tanged crescent blade, however.

Celt or Wedge

This celt pictured on the right hand side in Fig. 22 is a well constructed artifact. Its overall length measures 86 mm., its maximum width is 46 mm. which tapers down to 31 mm. at the cutting edge. The maximum thickness of the celt is 8 mm. The top edge of the celt appears as if it has been hammered upon by some other implement.

Copper Clip

This is a piece of rolled sheet copper, badly corroded, 12 mm. long and 8 mm. wide shown in the center of Fig. 23. It was probably used to hold the strings of beads together.

Beads

The snail beads measure about 13 mm. in length. They

were pierced to allow for stringing.

The marine shell beads show considerable working on them. They are round and have a hole drilled through them for stringing. The holes in some of the beads are tapered indicating that the drill didn't go through as far on one side as the other. The beads measure 13 to 15 mm. across and 3 to 4 mm. thick. There were more beads of both varieties than are pictured, but these had disintegrated to the point that only tiny bits of shell remained.

Celt or Wedge

This celt pictured on the left side in Fig. 22 is the most interesting of all the copper artifacts. It was found in the region of burial 3, and is of much cruder workmanship than the other celt described above. Its maximum length is 105 mm., while the maximum width of 46 mm. tapers down to 27 mm. at the cutting edge of the celt. The maximum thickness is 8 mm.

The importance of this celt lies in the fact that it had preserved on it evidence of some material that is woven or tied into a mesh of about 2 mm. square. It has not been determined whether this mesh is of animal or plant fibre or whether this is cloth or basketry. The preserved material is located in the upper right hand corner of the celt as pictured in Fig. 22.

General Conclusions

As is already apparent, conclusions and inferences have been made throughout the foregoing paper. However, in the light of previous excavations at the Reigh Site this find adds some important information to the answering of the questions posed by Dr. Baerreis in the Wisconsin Archeologist, Vol. 35, No. 1, March 1954, pp. 31-35.

It is apparent that the double burial described above is unique from any of those excavated in 1953 in several respects. These include: 1. The east-west orientation of the burials, 2. The covering of the entire double burial with ground red ochre, 3. The apparent ceremonialism accompanied by burning over an open grave, 4. The inclusion of copper artifacts unlike any found in 1953. 5. The preservation of perishable materials through the effects of the corrosion of copper.

Some of the above are features which can be used in de-

termining whether the burials at the Reigh Site represent a single cultural complex or several cultural complexes. It should be noted that some of the features listed by Baerreis are also found in the double burial described above. These include such things as a double interment, extended burial, red ochre, artifacts buried with bodies and shell beads.

This double burial seems to be part of what has been previously identified as the Old Copper Complex in the Wisconsin Archeologist, Vol. 32, No. 1, March 1951, p. 11. The crescents are representative of type A and B, p. 12. The celts are variants of type G, p. 13.

Of further interest is Wittry's Tabulation of Cache Associations in his article on Old Copper. In this he points to a cache found on the Okrou farm. Among the artifacts he lists one crescent type A, one celt type G, and one spud type C. It is our understanding that the Okrou farm and the Reigh farm are the same farm. If this is true it then appears that perhaps the burial complex at the Reight site is best placed in the Old Copper Complex, rather than in the Early Woodland period where Baerreis feels it is reasonable to place it. More information on the matter will no doubt help to clarify and answer the questions raised about this very interesting and productive site.

The find described in the foregoing article also raised some interesting questions. First of all, what type of wood was used by these people for shafts for their projectile points. This question was answered in part by the personnel of the Forest Products Laboratory who examined one of the points and concluded that the shaft was made of birch.

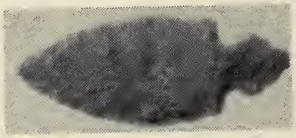
Another question that no doubt will start all sorts of speculation deals with the material preserved on the celt found in association with burial 3. If this is woven cloth, would this not be incongruous with concepts of a hunting and gathering culture such as Old Copper is supposed to be? * Up to this point no determination has been made of what the material is made. It is hoped that may be determined soon. Truly, the Reigh site has been one of the most productive and provocative sites in all of Wisconsin.

* This appears to be fiber netting. (R. R.)

Interesting Wisconsin Specimens

COPPER CRESCENT

Unusual in having two holes. Four inches wide, 1-1/8 inches high, holes are 3/16 inches in diameter. From the Sheboygan area, and collection of Harold Hempel.



CHERT POINT

With triangular tang. One and a half inches in length. Found by Toddy Luebke on his farm near Iron Ridge, Dodge County.

TESTING OPERATIONS AT THE OX-BOW SITE

Chandler W. Rowe

Extensive archaeological testing operations were carried on during the week of August 12-18, 1956 at the Ox-site by Robert Ritzenthaler, Curator of Anthropology, Milwaukee Public Museum, George I. Quimby, Curator of North American Archaeology, Chicago Natural History Museum, and the writer, professor of Anthropology, Lawrence College, who represented the Wisconsin Archaeological Survey. Interest in the site and arrangements for permission to work were developed by Mr. Rudy Zilisch. The Ox-Bow site is located inside the ox-bow bend in the Menomini River, fifteen miles west of Stephenson, Michigan on the propery of Mr. Pete Weber. who not only granted permission to carry out investigations on his land, but allowed the group to use his hunting cabin, and generally contributed his time and interest in may ways. The party is grateful to both of these men.

Test trenching over a wide area failed to disclose the 17th C. trading post or the location of an historic cemetery, both of which were postulated, but did yield a moderate amount of historical material in the form of various types of nails and spikes, bolts, china and crockery sherds, clay pipe stemps, stove parts, old tools, a 1905 ten cent piece as well as a quantity of deer bone, indicative of a former lumber camp. One trench which was run through a series of small depressions along the edge of the river bank to the west of the cabin revealed a burial pit. This pit was a small, shallow basin, 14" deep at the lowest point, and contained the remains of four individuals, both male and female. The remains were incomplete skeletons of the secondary or bundle reburial type. Associated with the bones was an amount of cloth upon which small, glass seed beads had been sewn. In the pit fill a few grit-tempered, cord roughened sherds, quartz chips, a fragmentary quartz point and two iron nails with bits of wood adhering were recovered. Although difficult to determine accurately, it appeared that the remains were undisturbed.

CHARLES E. BROWN CHAPTER REPORT

Officers for the chapter's fourth year were Mr. E. F. Dietz, president; Mrs. Charles E. Brown, secretary; Warren Wittry, treasurer. There were 45 members.

Meetings continued to be held on the second Monday of each month during the academic year, in the Sellery Room on the first floor of the State Historical Society's building in Madison.

It is impossible, in this brief report, to describe adequately the fine series of programs arranged by the program chairman, Prof. David A. Baerreis. Attendance ranged from 25 to 50, averaging 35.

October: Election of officers for 1955-56, reports on summer field-work, and movies: **Lascaux, Cradle of Man's Art** and **The Loons Necklace.**

November: Dr. William S. Laughlin, **Recent Anthropological Research in the Aleutian Islands.**

December: Warren L. Wittry, **1955 Rockshelter Excavations.**

January: Dr. David A. Baerreis, **Contrasts in Highland and Lowland Maya Archeology.**

February: Robert F. Maher, **The Natives of the Purai Delta of New Guinea.**

March: Robert L. Hall, **Portraits of Early Wisconsin Indians.**

April: George I. Quimby, **Paleogeography and Prehistoric Cultures of the Upper Great Lakes Region.**

May: Election of officers for 1956-57, recent research by chapter members: Miss Joan Freeman, **The Point Sauble Site.** Mrs. Jack Slowey, **Distribution of Stone Axe Types in Wisconsin.** Mr. E. F. Dietz, **X-raying Ancient Campsites by Phosphate Analysis.**

In May, chapter members participated in the excavation of a Middle Woodland village site. The dig, under the direction of Dr. Baerreis, was at Nelson Dewey State Park where construction activity would soon threaten the site.

KOLTERMAN MOUND 18 RADIOCARBON DATE

Warren L. Wittry

A recent letter from Dr. James B. Griffin, Director of the Museum of Anthropology, University of Michigan, announces the second radiocarbon date for the Effigy Mound culture, the first for an effigy mound in Wisconsin.

The date was obtained from charred wood found in a cremation in Mound 18 (otter effigy) of the group on the August Kolterman farm in Dodge County. Salvage excavations by a joint party from the State Historical Society, Milwaukee Public Museum, and Wisconsin Archeological Society were conducted at this site in 1954 when highway remodeling threatened to destroy several of the mounds. The results of this work have been reported in a recent issue of this journal (Wittry and Bruder).

The date is 1,180 + or − 250 years ago, or 776 A. D. The 250 year leeway provides a reasonable degree of certainty that the age falls within the period 526-1026 A. D. We are indebted to Dr. H. R. Crane of the University of Michigan

Collecting charred wood from Mound 18, Kolterman Group. A portion of the sample is shown at right resting on the partially excavated cremation. R. W. Nero points to chert point adjacent to crushed pottery vessel. (Courtesy, Wisconsin Magazine of History).

Memorial-Phoenix Project, Radiocarbon Laboratory for the dating of the sample (number M-398).

This is significant in that it not only gives a date for the building of an effigy mound, but applies as well to the types of artifacts found in the mound. A pottery vessel of the **Madison Cord Impressed** type had been placed next to the cremation. Two chipped-stone implements were found in close proximity to the pot. One of them is of a distinctive shape, basically triangular in outline with a shallow V-shaped indentation in the base.

The only other Effigy Mound date which has been determined so far is for charcoal from a bear effigy at Effigy Mounds National Monument near McGregor, Iowa. Unfortunately, no burials or artifacts were found in this mound. There was, however, in addition to the charcoal concentration in the body of the effigy, a layer of rocks in the flank region which may have been an "altar." The date was established as 930 + or − 300 years ago (Beaubien, p. 64).

The two dates are about 250 years apart, but if we take into account the reasonable degree of error allowed in the date method, the two ranges overlap by about 300 years. It has been suggested that the Effigy Mound culture persisted over a period of time and that the two dates apply to relatively late manifestations (Rowe, p. 83; Wittry and Bruder, p. 11). What the earlier phases were like and what temporal changes took place within this interesting culture remain to be determined.

BEAUBIEN, PAUL L.
1953 Cultural Variation within Two Woodland Mound Groups of Northeastern Iowa **American Antiquity,** Vol. 19, No. 1, pp. 56-66.

ROWE, CHANDLER W.
1956 The Effigy Mound Culture of Wisconsin. Milwaukee Public Museum, **Publications in Anthropology, No. 3.**

WITTRY, WARREN L., and DR. E. G. BRUDER
1955 Salvage Operations at the Kolterman Mound Group. **The Wisconsin Archeologist,** n. s., Vol. 36, No. 1, pp. 3-12.

PREHISTORIC EARTH-WORKS IN IOWA COUNTY

Warren Wittry and Dr. E. G. Bruder

This group of four prehistoric mounds is located on the Lawrence F. Fitzimmons farm, Town of Waldwick, S. E. ¼ of N. W. ¼ Section 17, T. 5 N, R. 4 E, Iowa County, Wisconsin.

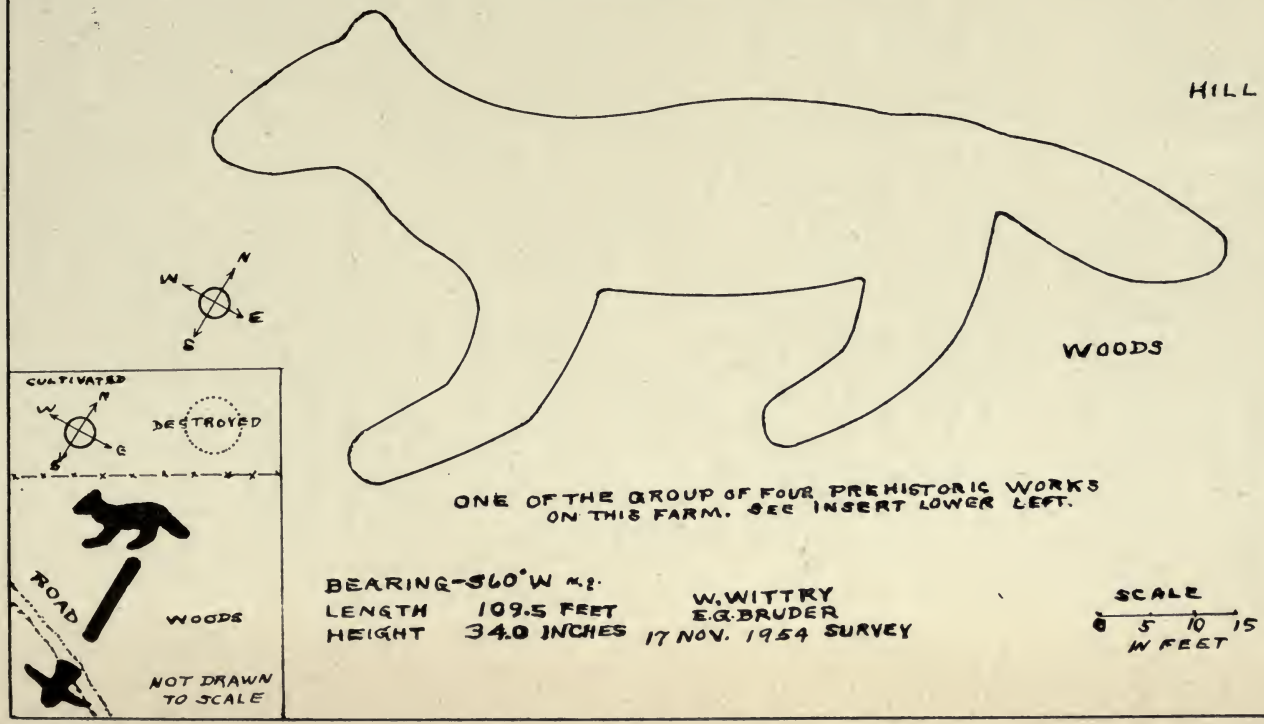
They are about seven miles southeast of Dodgeville, on a high hill sloping south and west, and were called to our attention by Professor Gunnar Johansen of Blue Mounds.

Mound No. 1 was a conical about 28 feet in diameter, and formerly about 4 feet high. It was excavated in salvage operations by Warren Wittry of the Wisconsin Historical Society in October, 1954. When Wittry arrived on the scene, the bulldozer had left only the outlying periphery of the mound. One flexed burial was found intact, but no artifacts of any kind were found with several burials in this mound. It was located 36 feet north of the fence, and in a line due south, with the wolf, linear, and bird mounds. The three surviving mounds are in a wood pasture, and are in no immediate danger of destruction. Iowa County has very few of these ancient works remaining. The running wolf, located 36 feet south of the line fence, is a splendid earthwork of the effigy mound culture. It represents correct anatomical features realistically constructed by its prehistoric artists. The wolf bears S 60° W mg, is 109.5 feet long, and 34 inches high. The upper parts of both legs are parallel, as well as those of the lower parts of its legs, representing an animal in running position. It has never been opened. The entire periphery is sharply defined. This mound is an example of the fine heritage left to us by the prehistoric people who at one time resided in this non-glaciated country.

Due south of the wolf, 68 feet away, is a well preserved linear mound, with a length of 90 feet, width 16.5 feet, and a height of 26 inches. It bears due south and is heavily covered with brush.

In line with these mounds, and 13 feet away is a flying bird mound. It is 49 feet long, with a wingspread of 40 feet, and a tail 15.4 feet wide. It is 22 inches high at the shoulders, tapering to 18 inches at the tail. Part of the left wing and tail have been partly cut down by a private road in this

RUNNING WOLF EFFIGY
LAWRENCE F. FITZSIMMONS FARM
TOWN OF WALDWICK
S.E.1/4 of N.W.1/4 SECTION 17 T5N-R4E
IOWA COUNTY WISCONSIN



wooded area. The bird has never been opened, and is representative of bird mound types found in western Wisconsin.

The Wisconsin Conservation Department has a marker on the town road referring to thes mounds, and a sign illustrating the group on the site.

A second visit to these mounds brought forth additional information we had hoped to find. The mounds are located on the southwesterly slope of a very high hill overlooking the ancient trail below. The trail followed along the east bank of the east branch of the Pecatonica River, which has exposed the Galena-Trenton limestone underlying the hill, creating a rather precipitous drop to the river bank. On its course from the northwest, on its northern bank, a directional tree stood until recent times, serving as a guide marking the ancient trail. As in common with similar mound groups, we located the spring which the Indians used for drinking water. George Fitzsimmons pointed out and described the large area of flint flakes nearby, suggesting the presence of a former camp or village site. The spring has stopped flowing in recent years, reminding us of the slowly, but surely receding water table in our state. No evidence of habitation was found in the immediate vicinity of the mound area. The excellent views from this site suggests the true appreciation of the prehistoric people for beautiful scenery. This fact is apparent in many of Wisconsin's mound groups, being located on high vantage points overlooking their former trails, camp, village sites, and ceremonial grounds.

THE MIDWEST ARCHAEOLOGICAL CONFERENCE held its organizational meeting at the University of Illinois on October 6 and 7, 1956. Twenty archeologists from eight states attended with Wisconsin being represented by Prof. David A. Baerreis and Warren Wittry. The first day was devoted to a series of discussions on the definition and characteristics of the major periods and stages in the regiou's prehistory.

Highway salvage archeology was the main topic of the second day. Under a provision of the Federal-Aid Highway Act of 1956, archeological remains in danger of being destroyed by federally-aided highway construction can be salvaged through the use of government funds. Each of the states represented at the meeting reported its progress in regard to this program. The Wisconsin Archaelogical Survey will be in close touch with the State Highway Department. The help of the WISCONSIN ARCHEOLOGICAL SOCIETY will be needed in locating sites likely to be destroyed. We hope that members will participate.

THE FOLLOWING NEW MEMBERS ARE WELCOMED INTO THE SOCIETY:

Richard Sohrweide, 319 N. 69th, Wauwatosa 13, Wis.
Elmer C. Luther, 1754 S. 62nd St., West Allis, Wis.
Bud Sorenson, Harlowton, Montana.
Francis Altman, 419 Western Ave., Fond du Lac, Wis.
William Probert, 5349 N. 115th St., Milwaukee, Wis.
Glen Verick, 2255 S. 76th St., Milwaukee 14, Wis.
Robert Stein, 514 W. Vienna Ave., Milwaukee 12, Wis.
Paul Sander, 8026 7th Ave., Kenosha, Wis.
Robert Howard, 2615 N. Frederick, Milwaukee, Wis.
James Silverberg, 2251 N. Summit, Milwaukee, Wis.
Lora Hart, 1902 N. 49th St., Milwaukee, Wis.
Zeno LaTellier, 1292 N. 63rd, Wauwatosa, Wis.

Carleton Wolff, 63 S. Marr St., Fond du Lac, Wis.
Arthur Leipold, 135 E. Maple St., Viroqua, Wis.

ANYONE KNOWING OF FLUTED POINTS in the Wisconsin-Upper Michigan area (except for the driftless area of southwestern Wisconsin) please contact GEORGE QUIMBY, CHICAGO MUSEUM OF NATURAL HISTORY, CHICAGO 5, ILLINOIS. If you have any fluted points in your collection why not write Quimby giving him the number and location.

Bob Ritzenthaler, Editor

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